ORDER NO. AD8804003C8

Service Manual

Amplifier

Digital Integrated Amplifier

SU-X980D

Color

(K).....Black Type

Area

Color	Area
(K)	(E) .....Continental Europe.
(K)	(EH).....Holland.
(K)	(XL) .....Australia.
(K)	(XA).....Asia,Latin America,Middle Near East,Africa and Oceania.
(K)	(EK).....United Kingdom.
(K)	(EB).....Belgium.
(K)	(EF) .....France.
(K)	(EG).....F.R.Germany.
(K)	(Ei) .....Italy.
(K)	(XB).....Saudi Arabia.

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

DIN power output	
1 kHz THD:1%	2 x 100 W (8Ω)
Total harmonic distortion	
rated power at 1 kHz	1% (8Ω)
Harmonic distortion	
half power at 1 kHz	0.009% (8Ω)
Residual hum and noise	0.2 mV
Damping factor	30 (8Ω)
Input sensitivity and impedance	
PHONO	3mV/47 kΩ
TUNER,AUX,TAPE 1,TAPE 2	150mV/22 kΩ
CD	200mV/22 kΩ
Maximum input voltage (1 kHz,RMS)	
PHONO	100 mV
S/N (rated power 8Ω)	
PHONO	75 dB (IHF,A:79 dB)
TUNER,CD,AUX,TAPE 1,TAPE 2	82 dB (IHF,A:83 dB)
Frequency responce	
PHONO	RIAA standard curve ± 0.8dB(30 Hz ~ 15 kHz)
TUNER,CD,AUX,TAPE 1,TAPE 2	15 Hz ~ 55 kHz (-3 dB)
CD,DAT (digital section)	15 Hz ~ 20 kHz (-0.5 dB)
Tone controls	
BASS	50 Hz, + 10 dB ~ -10 dB
TREBLE	20 kHz, + 10 dB ~ -10 dB
Muting	-20 dB
Super bass	70 Hz, + 10 dB
Output voltage	
TAPE 1,TAPE 2,REC OUT	150 mV
Channel balance,AUX 250 Hz ~ 6,300 Hz	±1.0 dB
Channel separation, AUX 1 kHz	60dB
Headphones output level and impedance	590 mV/330 Ω
Load impedance	
MAIN or REMOTE	8 Ω ~ 16 Ω
SURROUND	8 Ω ~ 16 Ω

■ GENERAL

Power consumption	370 W
Power supply	
For United Kingdom and Australia	AC 50 Hz/60 Hz,240V
For continental Europe	AC 50 Hz/60 Hz,220V
For others	AC 50 Hz/60 Hz,110V/127V/220V/240V
Dimensions (W x H x D)	360 x 128 x 300 mm (14-3/16″ x 5-1/32″ x 11-13/16″)
Weight	6.8 kg (15 lb.)

Notes:

1.Specifications are subject to change without notice. Weight and dimensions are approximate.

2.Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

■ CONTENTS

	Page
BEFORE REPAIR	2
PROTECTION CIRCUITRY	2
ACCESSORY	2
LOCATION OF CONTROLS	3
CONNECTIONS	4 ~ 6
DIGITALIZATION OF AUDIO SIGNALS	7
DISASSEMBLY INSTRUCTIONS	8 ~ 10
SCHEMATIC DIAGRAM	11 ~ 18
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES	19
PRINTER CIRCUIT BOARDS	19 ~ 23
WIRING CONNECTION DIAGRAM	24
BLOCK DIAGRAM	25,26
REPLACEMENT PARTS LIST (cabinet)	27
EXPLODED VIEW	28 ~ 30
FUNCTIONS OF IC TERMINALS	31 ~ 34
REPLACEMENT PARTS LIST	35,36
RESISTORS AND CAPACITORS	37 ~ 39

■ BEFORE REPAIR

(1)Turn off the power supply. Using a 10Ω, 5W resistor connect both ends of power supply capacitors(C701,C702,6800μF) in order to discharge the voltage.

(2)Before turning the power supply on , after completion of repair , slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

Power supply voltage	AC110V	AC127V	AC220V	AC240V
Consumed current 50Hz	241 ~ 733mA	223 ~ 669mA	122 ~ 365mA	112 ~ 336mA
Consumed current 60Hz	233 ~ 698mA	217 ~ 650mA	119 ~ 356mA	110 ~ 330mA

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

* No sound is heard when the power is switched ON.
* Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted" , or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1.Switch OFF the power.

2.Determine the cause of the problem and correct it.

3.Switch ON the power once again.

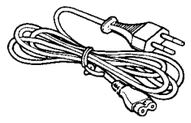
Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ ACCESSORY

• AC power supply cord 1
Configuration of AC power supply cord differs according to area.

SJA173.....For (XL) area only.
SJA183.....For (XB) area only.
SJA168 .....For (XA) area only.
SJA188 .....For (EK) area only.
SFDAC05E03.....For (E),(EG),(EF),(EH),(EB) and (Ei) areas.



■ LOCATION OF CONTROLS

•Front panel

Audio muting switch/indicator (MUTING)
Press this switch when a disc is being changed or to temporarily reduce the volume level (approx. 1/10).

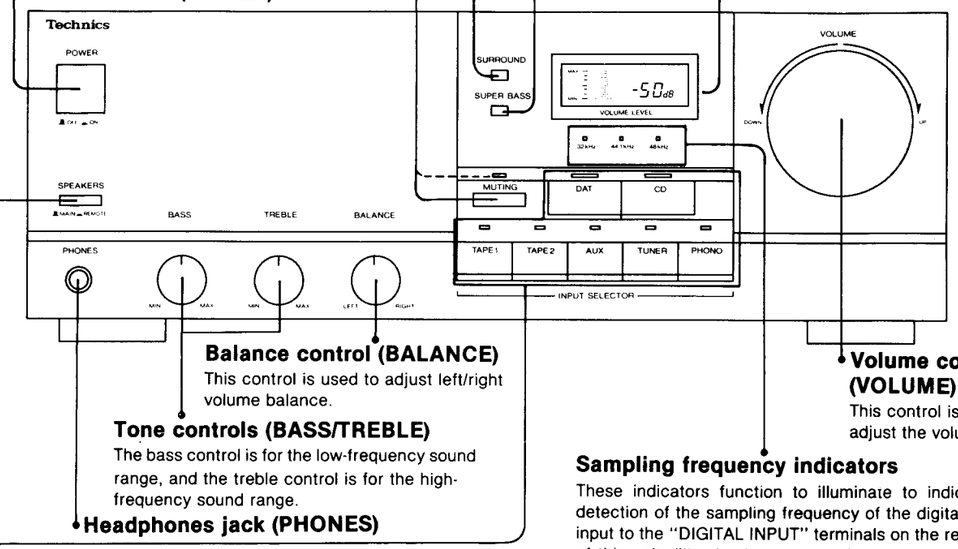
Speaker selector (SPEAKERS)
This selector is used to select the speaker systems to be used.
MAIN (→):
Sound can be heard from the speakers connected to the "MAIN" and "SURROUND" terminals,
REMOTE (→):
Sound can be heard from the speaker systems connected to the "REMOTE" terminals.
In this position, sound cannot be heard from the speaker systems connected to the "SURROUND" terminals.

Power switch (POWER)

Surround-sound switch (SURROUND)
This switch is used to switch the surround sound effect on and off. (The switch itself will be illuminated.)

Super bass switch (SUPER BASS)
When this switch is switched ON (the switch itself will be illuminated.), the ultra-low frequency range can be reinforced.

Volume-level indicator (VOLUME LEVEL)
The volume level is indicated in decibels (dB).
The dB indication numerically shows the attenuation characteristic of the amplifier; the indication ranges from "– –dB" (minimum) to "0 dB" (maximum).
The volume level becomes greater as the indication proceeds from –76 to –74 to –72 dB.



Balance control (BALANCE)
This control is used to adjust left/right volume balance.

Volume control (VOLUME)
This control is used to adjust the volume level.

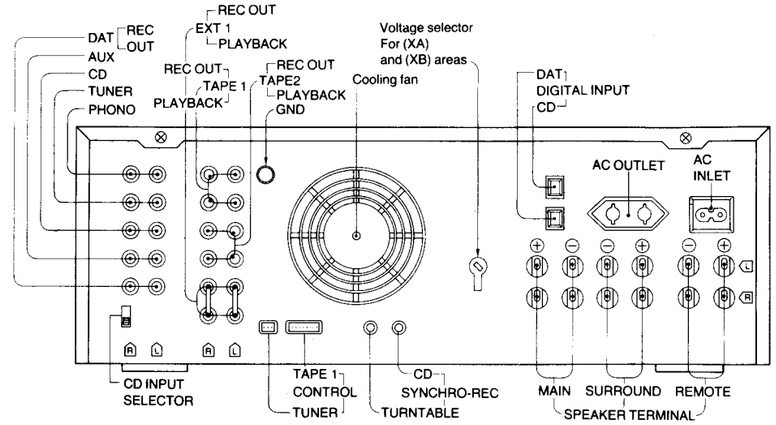
Tone controls (BASS/TREBLE)
The bass control is for the low-frequency sound range, and the treble control is for the high-frequency sound range.

Headphones jack (PHONES)

Input selectors/indicators (INPUT SELECTOR)
These selectors are used to select the sound source to be heard, such as a disc, radio broadcasts, etc. The corresponding indicator illuminates during operation to indicate the selected sound source.

Sampling frequency indicators
These indicators function to illuminate to indicate the detection of the sampling frequency of the digital signals input to the "DIGITAL INPUT" terminals on the rear panel of this unit. (Illumination occurs when digital signals are received.)
32 kHz: For digital signals with the sampling frequency of 32 kHz mode
44.1 kHz: CD and others
48 kHz: For digital signals with the sampling frequency of 48 kHz mode

•Rear panel



***Phono input capacitance is about 100 pF.**

■ LOCATION OF CONTROLS

●Front panel

Audio muting switch/indicator (MUTING)
Press this switch when a disc is being changed or to temporarily reduce the volume level (approx. 1/10).

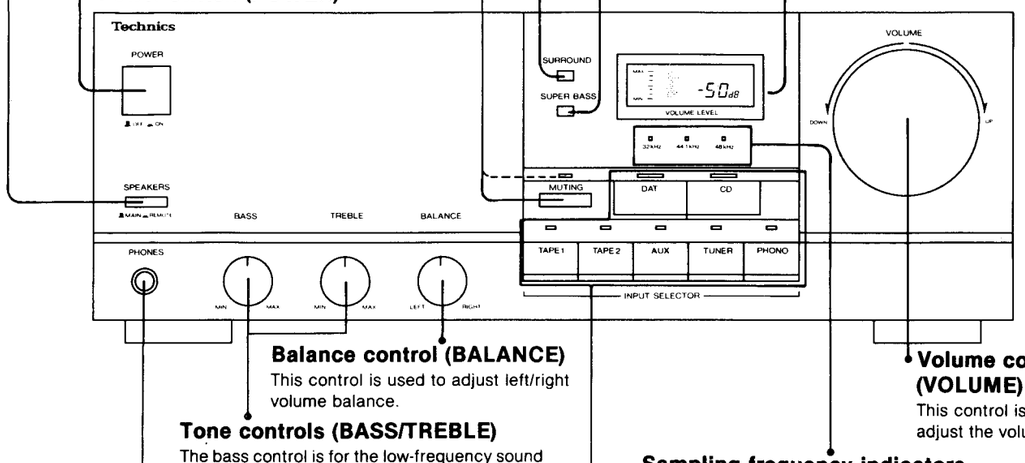
Speaker selector (SPEAKERS)
This selector is used to select the speaker systems to be used.
MAIN (→):
Sound can be heard from the speakers connected to the "MAIN" and "SURROUND" terminals.
REMOTE (→):
Sound can be heard from the speaker systems connected to the "REMOTE" terminals.
In this position, sound cannot be heard from the speaker systems connected to the "SURROUND" terminals.

Power switch (POWER)

Surround-sound switch (SURROUND)
This switch is used to switch the surround sound effect on and off. (The switch itself will be illuminated.)

Super bass switch (SUPER BASS)
When this switch is switched ON (the switch itself will be illuminated.), the ultra-low frequency range can be reinforced.

Volume-level indicator (VOLUME LEVEL)
The volume level is indicated in decibels (dB).
The dB indication numerically shows the attenuation characteristic of the amplifier; the indication ranges from "– –dB" (minimum) to "0 dB" (maximum).
The volume level becomes greater as the indication proceeds from –76 to –74 to –72 dB.



Balance control (BALANCE)
This control is used to adjust left/right volume balance.

Tone controls (BASS/TREBLE)
The bass control is for the low-frequency sound range, and the treble control is for the high-frequency sound range.

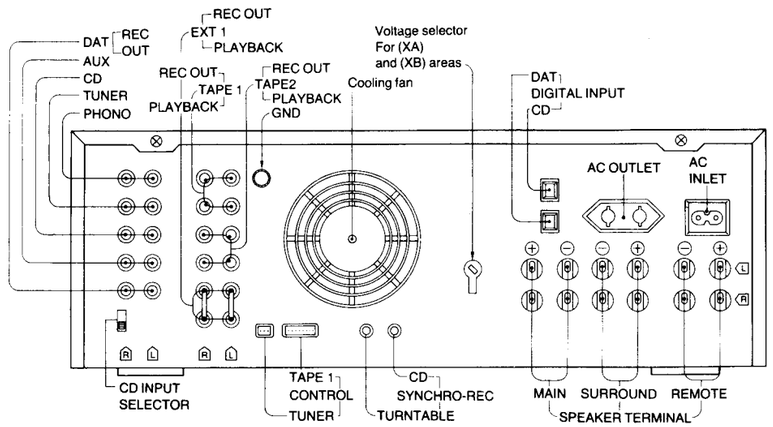
Headphones jack (PHONES)

Input selectors/indicators (INPUT SELECTOR)
These selectors are used to select the sound source to be heard, such as a disc, radio broadcasts, etc. The corresponding indicator illuminates during operation to indicate the selected sound source.

Volume control (VOLUME)
This control is used to adjust the volume level.

Sampling frequency indicators
These indicators function to illuminate to indicate the detection of the sampling frequency of the digital signals input to the "DIGITAL INPUT" terminals on the rear panel of this unit. (Illumination occurs when digital signals are received.)
32 kHz: For digital signals with the sampling frequency of 32 kHz mode
44.1 kHz: CD and others
48 kHz: For digital signals with the sampling frequency of 48 kHz mode

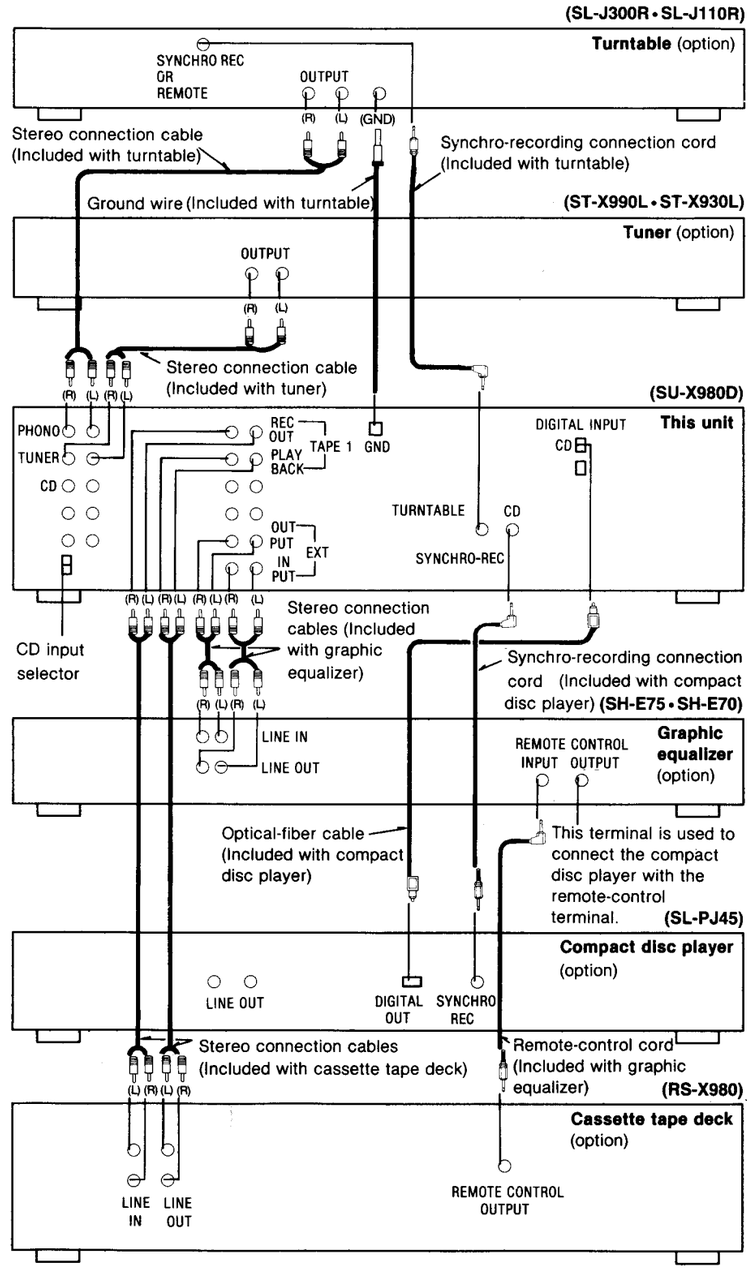
●Rear panel



***Phono input capacitance is about 100 pF.**

■ CONNECTIONS

1. Make the connections of the stereo connection cables, the synchro-recording connection cords (option), and the remote-control cord (option).
Then, set the CD input selector of this unit to the "DIGITAL" position. (See below.)
Note: Although the synchro-recording connection cords and the remote-control cord are differentiated in the figure below, actually they are the same shape.



■Compact disc player connections

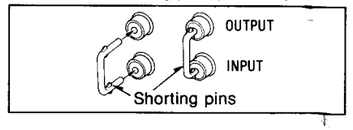
If your compact disc player does not include optical-fiber cable, use stereo connection cables (option) to make the connections between the "CD" terminals of this unit and the "LINE OUT" terminals of the compact disc player. If this type of connection is made, the amplifier's CD input selector should be set to "ANALOG".

■CD input selector of this unit

This selector is used for selection of the format (analog or digital) of the input signals from the compact disc player.
ANALOG:
Set to this position if stereo connection cables are used.
DIGITAL:
Set to this position if optical-fiber cable is used.
Notes:
1. Be sure the power switch of this unit is switched OFF before changing the setting of this selector. (Interference noise may be emitted if the power switch is ON.)
2. The setting of this selector must be made correctly; if not, no sound will be emitted when the "CD" setting of the input selector on this unit is selected.

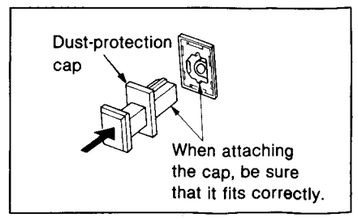
■"EXT" terminals of this unit

When these terminals are not in use, be sure to insert the shorting pins (included).



■"DIGITAL INPUT" terminals of this unit

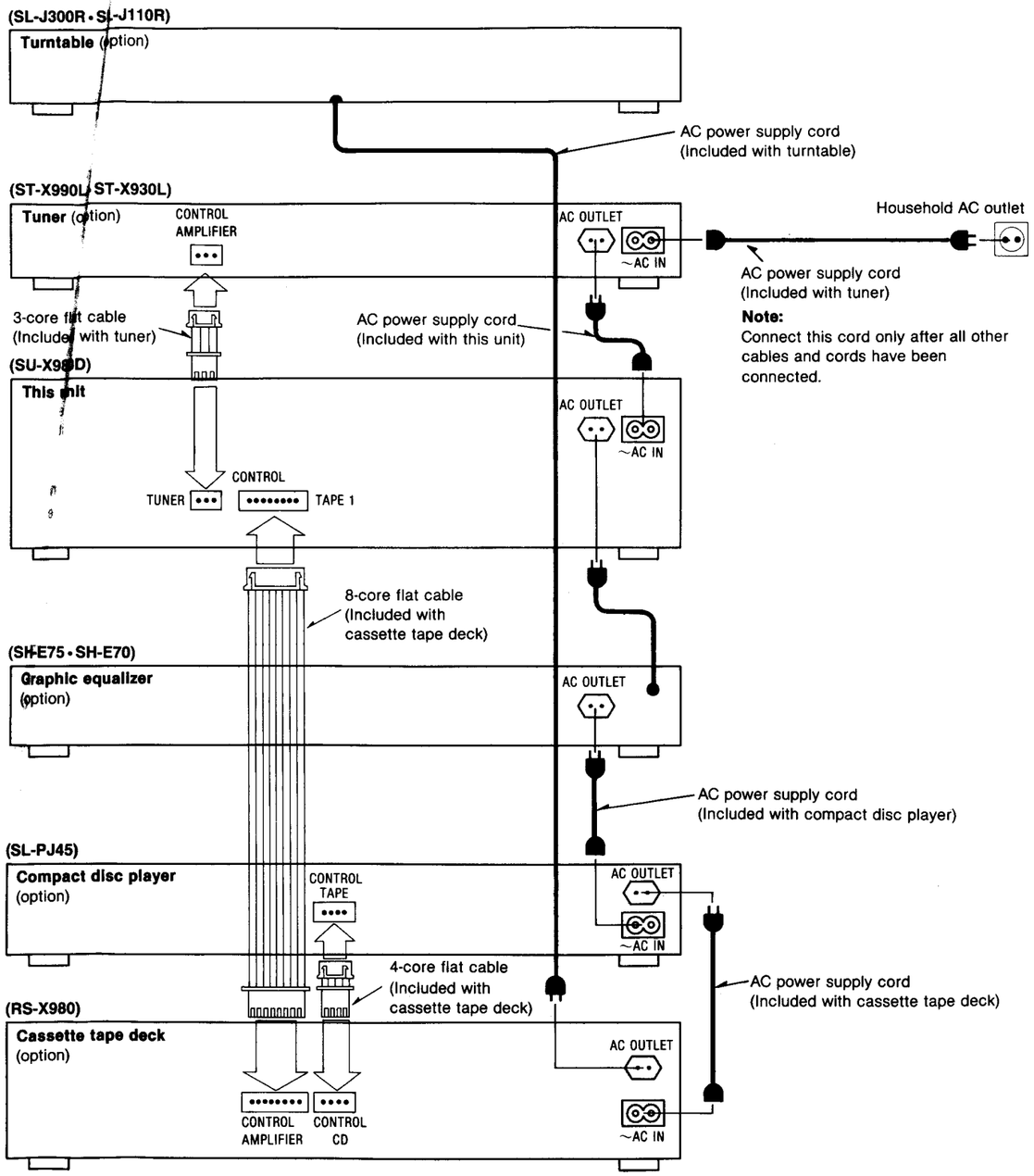
The dust-protection caps are used to cover and protect these terminals.
Remove the caps only when the "DIGITAL INPUT" terminals are to be used.
Note:
Be sure to use the dust-protection caps to again cover these terminals when that are not being used.
These covers serve to prevent the entry of dust, etc. into the terminals, because such foreign material can cause incorrect operation.



2. Make the connections of the flat cables and the AC power supply cords.

1. Do not connect video-related equipment (such as a TV, etc.) to the AC outlets of these components. (These outlets are especially for audio equipment.) Also do not exceed the indicated power ratings when connecting to these outlets.
2. The tuner's power outlet is interlocked with the power "STANDBY ⏻ /ON" switch of the tuner.
3. If the graphic equalizer is not used in combination with these components, connect the AC power supply cord of the compact disc player to the AC outlet of the amplifier. If the compact disc player is not used in combination with these components, connect the AC power supply cord of the cassette tape deck to the AC outlet of the graphic equalizer.

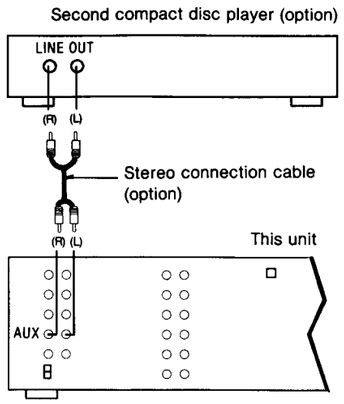
Note: The configurations of the AC outlets and AC power supply cords differ according to area.



Connections to other equipment

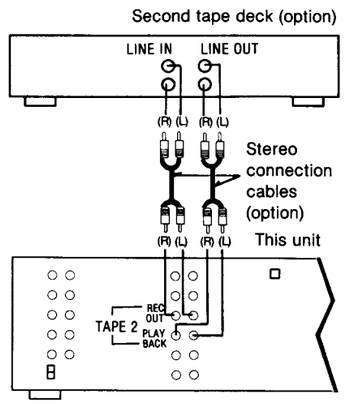
"AUX" terminals

Connect a second compact disc player, etc.



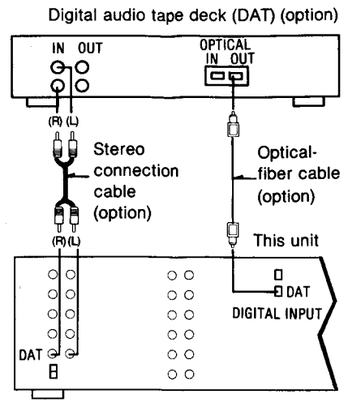
"TAPE 2" terminals

Connect a video cassette recorder (for audio only) or a second audio tape deck.



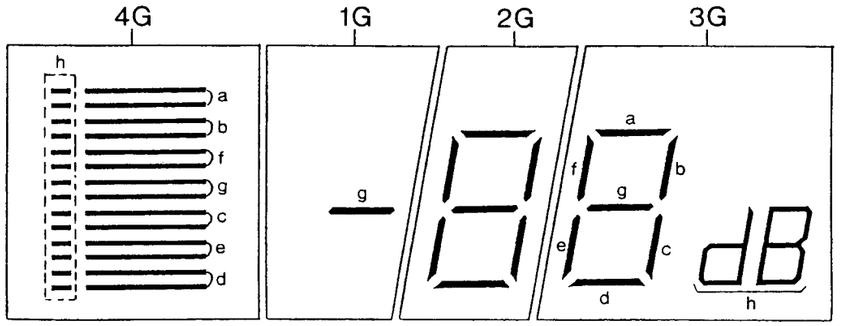
"DAT" terminals

Connect a digital audio tape deck (DAT).



■ DESCRIPTION OF FL PANEL

•GRID ASSIGNMENT



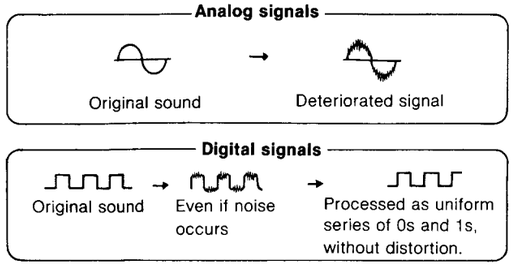
•PIN CONNECTION

Pin No.	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	F 2	F 2	N P	a	4 G	b	c	d	1 G	e	f	2 G	g	3 G	N P	h	3 G	N P	F 1	F 1

■ DIGITALIZATION OF AUDIO SIGNALS

■Why digitize?

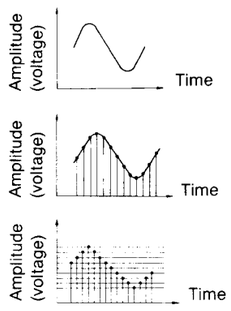
- Audio signals are analog signals with a continuous form.
- When these audio signals are subjected to repeated electronic processing (recording, playback, etc.), they become noisy and distortion occurs, thus resulting in deterioration of the sound quality.
- When these signals are first digitized before processing, they have the following advantages that prevent deterioration of the sound quality:
  ① Resistance to noise
  ② Extremely low distortion
  ③ Flat, even frequency response



■How signals are digitized

If it is known to what degree of minuteness the human ear can distinguish sounds, it is then possible, by using that data as the standard reference, to digitize them by dividing analog signals into minute pieces, after which they can be transmitted with a high degree of precision, and thereafter recorded and played back in the digitized format.

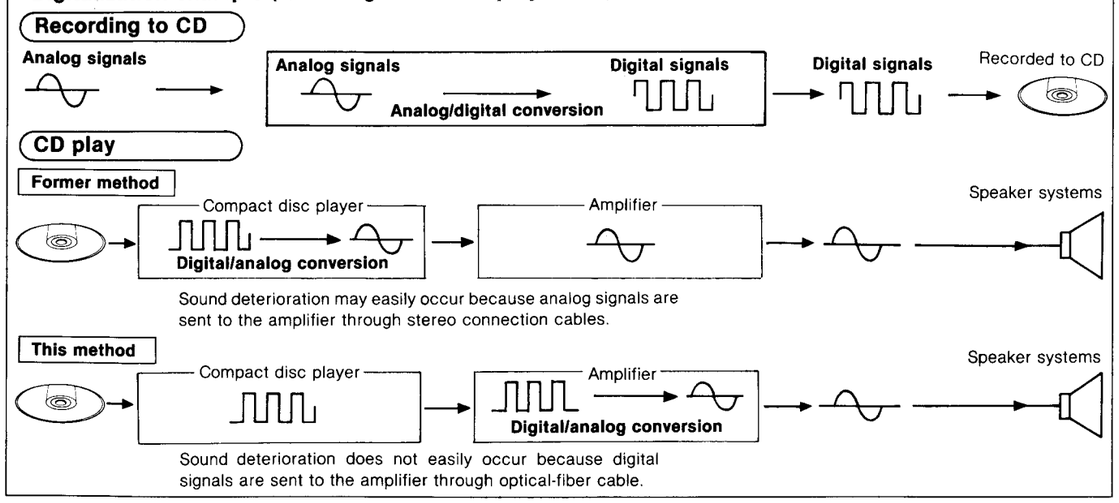
Analog signals are sampled, quantified and encoded.



Sampling:
Analog signals are minutely sub-divided on the lateral axis.

Quantification:
Sampled signals are minutely sub-divided on the vertical axis.

Digitalization example (recording to CD and play of CD)



What the sampling frequency is

The sampling frequency expresses the degree of minuteness to which signals can be cut, relative to a certain specified time interval, during sampling.
For compact disc sound:
Analog signals are cut 44,100 times (i.e., 44.1 kHz) during one second.
This 44.1 kHz is, therefore, the sampling frequency for compact disc sound.

What analog/digital conversion is

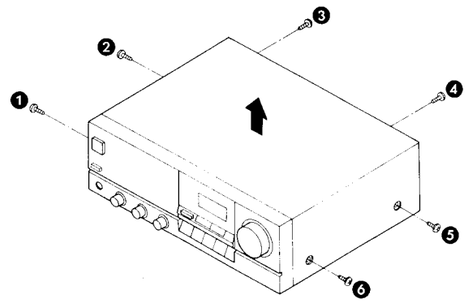
Audio signals (analog signals) are taken out (sampled) at certain fixed time intervals. The points at which this sampling frequency occurs are digitally encoded and converted to digital signals.

What digital/analog conversion is

Each sampling frequency point is returned (converted) to voltage, thus converting digital signals to the analog signals that we can hear.

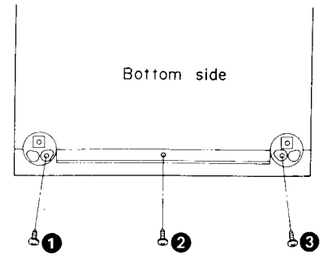
■ DISASSEMBLY INSTRUCTIONS

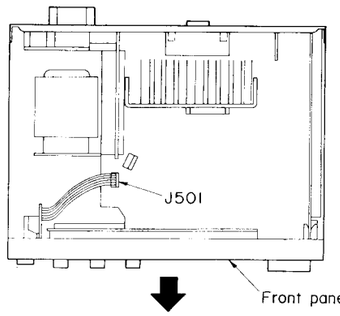
Ref. No. 1	How to remove the cabinet
Procedure 1	•Remove the 6 screws.



Ref. No. 3	How to remove the power switch P.C.B.
Procedure 1→2→3	1. Remove the power switch knob by pushing it from behind the front panel. 2. Remove the 2 screws (❶, ❷).

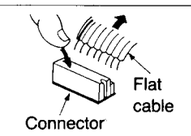
Ref. No. 2	How to remove the front panel
Procedure 1→2	1. Remove the 3 screws (❶~❸). 2. Remove the flat cable (J501). 3. Pull out the 1 connector (J801). 4. Remove the front panel in the direction of the arrow.



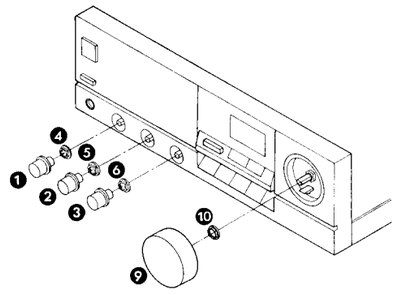


How to remove the flat cable

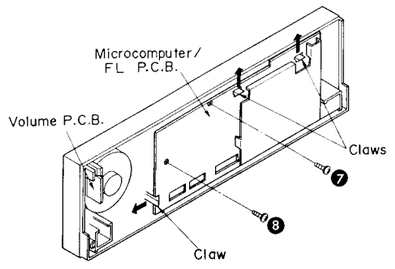
Pull out the flat cable while pressing the connector.

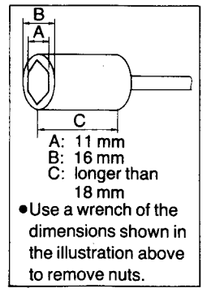


Ref. No. 4	How to remove the microcomputer/ FL P.C.B. and volume P.C.B.
Procedure 1→2→4	How to remove the volume P.C.B. 1. Remove the 1 knob (❾). 2. Remove the 1 nut (❿).



How to remove the microcomputer/FL P.C.B.
1. Remove the 3 knobs (❶~❸).
2. Remove the 3 nuts (❹~❻).
3. Remove the 2 screws (❼, ❽).
4. Push the 3 claws and remove the microcomputer/FL P.C.B.





A: 11 mm
B: 16 mm
C: longer than 18 mm

•Use a wrench of the dimensions shown in the illustration above to remove nuts.

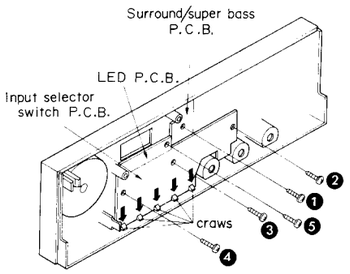
Ref. No. 5 — How to remove the surround/super bass P.C.B., input selector switch P.C.B. and LED P.C.B.

Procedure 1→2→4→5

How to remove the surround/super bass P.C.B.
- Remove the 1 screw (❶).

How to remove the input selector switch P.C.B.
1. Remove the 3 screws (❷~❹).
2. Push the 5 claws and remove the input selector switch P.C.B.

How to remove the LED P.C.B.
- Remove the 1 screw (❺).



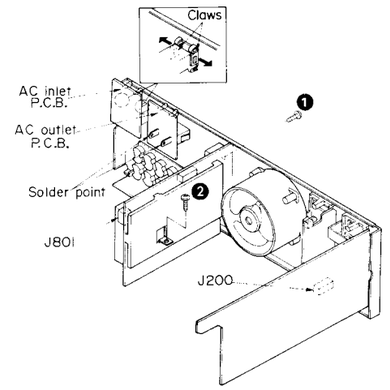
Ref. No. 6 — How to remove the digital input P.C.B. AC outlet P.C.B. and AC inlet P.C.B.

Procedure 1→6

How to remove the digital input P.C.B.
1. Pull out the 2 connectors (J200, J801).
2. Remove the 2 screws (❶, ❷).

How to remove the AC inlet
- Pull out the 2 claws in the direction of the arrow.

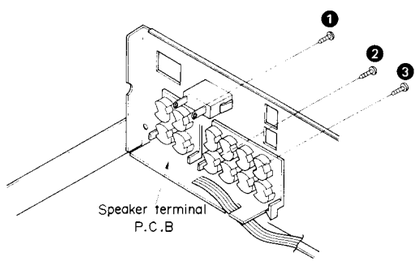
How to remove the AC outlet
- Unsolder the 2 terminals.



Ref. No. 7 — How to remove the speaker terminal P.C.B.

Procedure 1→6→7

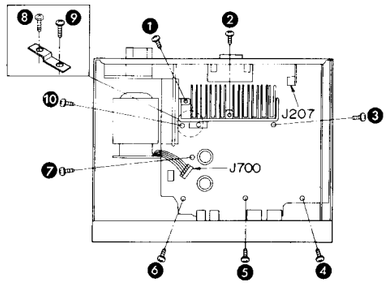
- Remove the 3 screws (❶~❸).



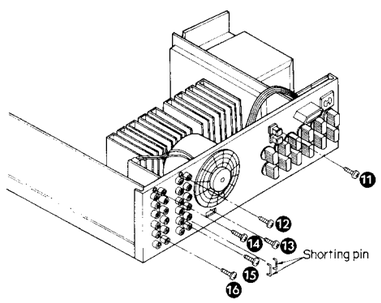
Ref. No. 8 — How to remove the main P.C.B.

Procedure 1→8

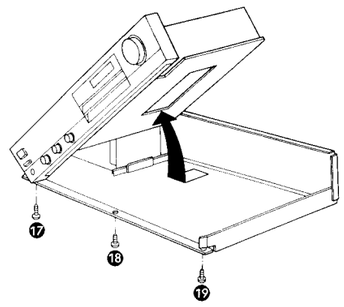
1. Remove the 8 screws (❶~❿).
2. Remove the flat cable (J207, J700).



3. Remove the 6 screws (⓫~⓰).
4. Remove the shorting pin.



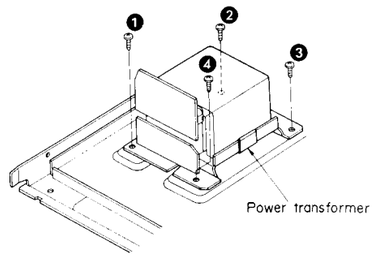
5. Remove the 3 screws (⓱~⓳).



Ref. No. 9 — How to remove the power transformer

Procedure 1→6→7→9

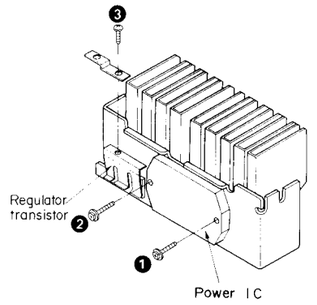
- Remove the 4 screws (❶~❹).



Ref. No. 10 — How to remove the power IC and regulator transistor

Procedure 1→8→10

1. Unsolder the power IC or regulator transistor.
2. Remove the 3 screws (❶~❸).

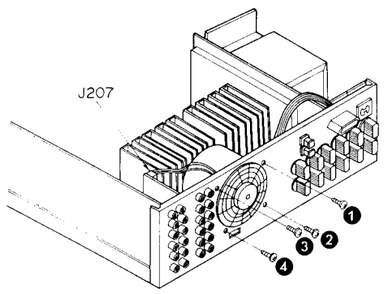


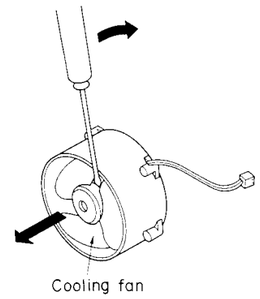
- **When mounting the power IC or regulator transistor.**
  Apply silicone compound (SZZOL15) to the rear side of power IC or regulator transistor.

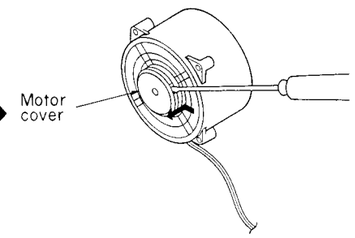
Ref. No. 11 — How to remove the fan motor

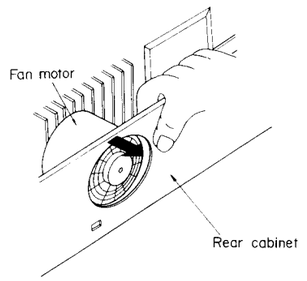
Procedure 1→11

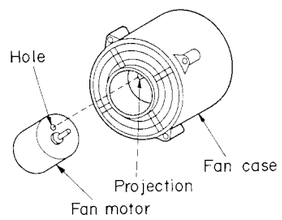
1. Pull out the 1 connector (J207).
2. Remove the 4 screws (❶~❹).
3. Press the rear cabinet in the direction of the arrow to remove the fan motor.
4. Insert a screwdriver at the root of the cooling fan. Force it out of the motor shaft.
5. Remove the motor cover by used ⊖ screwdriver.
6. Remove the motor from the fan casing.
7. When mounting the motor fan, align the fan casing's projection with the hole of the fan motor.

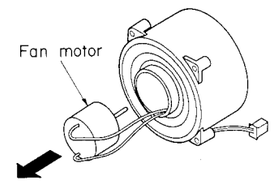












■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

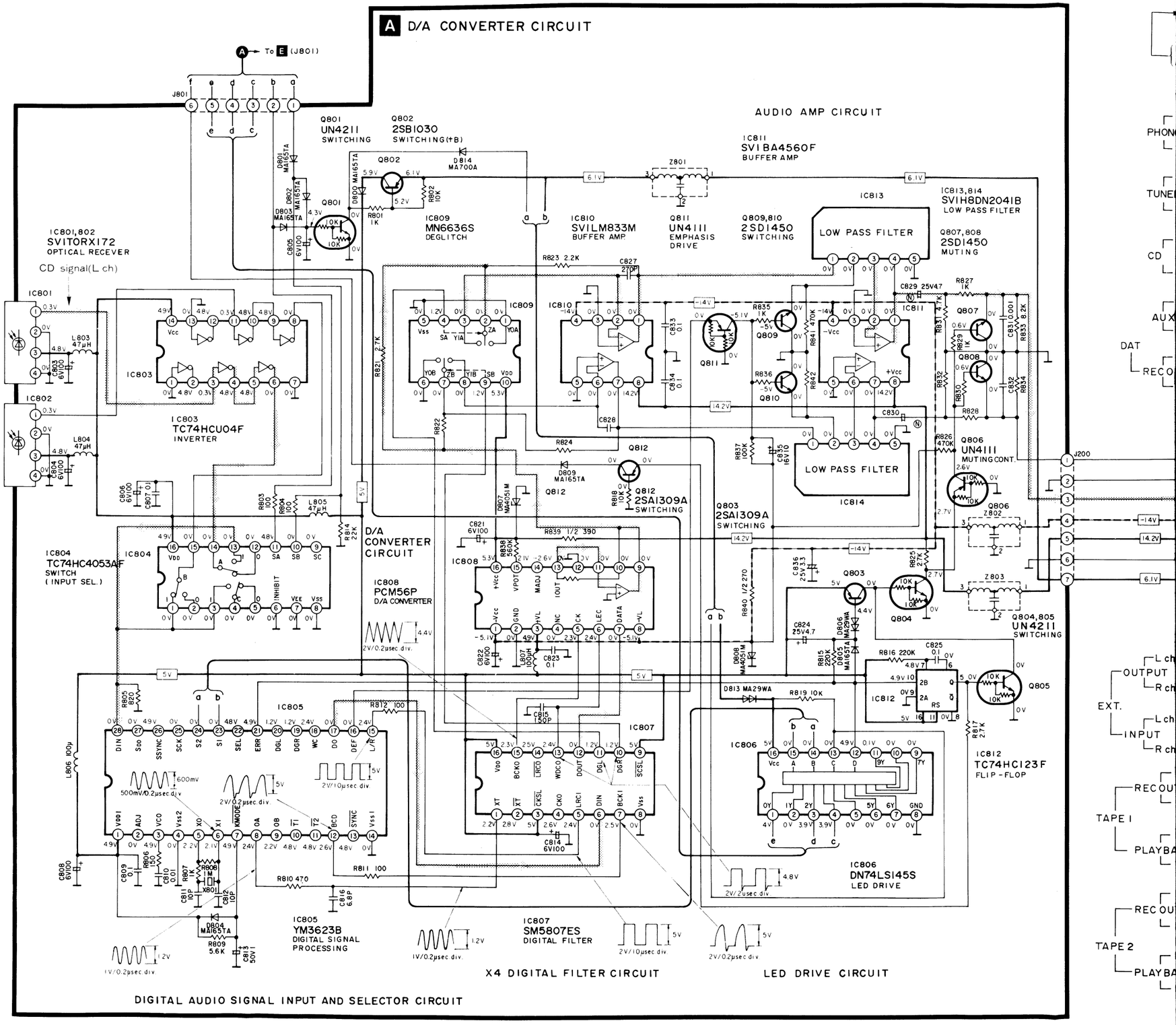
Notes:

- **S201** : CD input selector switch in "**digital**" position.
- **S501** : Speaker selector switch in "**main**" position.
- **S601~S607** : Input selector switches.
  S601: Phono, S602 : Tuner, S603 : CD, S604 : Tape 1
  S605; Tape 2, S606 : AUX, S607 : DAT,
- **S608** : Audio muting selector switch.
- **S609** : Surround selector switch.
- **S610** : Super bass switch.
- **S700** : Power source switch in "**on**" position.

CD • Phono signal line
Phase difference signal
Positive voltage line
Recording signal
Super bass signal
Negative voltage line

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

***Caution!**
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care furing repair.
*Cover the parts boxes made of plastics with aluminum foil.
*Ground the soldering iron.
*Put a conductive mat on the work table.
*Do not touch the legs of IC or LSI with the fingers directly.



13 14 15 16 17 18 19 20 21 22 23 24 25 26

B PHONO EQ. AMP/ATTENUATOR/SURROUND AMP/ INPUT SELECTOR CIRCUIT

PHONO EQ. AMP CIRCUIT

IC101 AN6558F EQ AMP

IC200 TC4066BF CD INPUT SELECTOR

IC201 TC9164N INPUT SELECTOR

INPUT SELECTOR CIRCUIT

IC301 M5238P PHASE SHIFT

IC302 AN6554F MIXING/ PHASE SHIFT

IC303 AN6558F BUFFER AMP

SURROUND AMP CIRCUIT

Q301,302 2SK301 SWITCHING

Q303 2SA1309A SWITCHING CONT.

D301 MA165TA

Phase difference signal

Phono signal(L ch)

Recording signal

For (EG,EI) areas.

S201 (CD INPUT SELECTOR) analog ⟷ digital

IC304 IC305 AN6557F MIXING AMP

IC306 M5113IL ATTENUATOR

IC307 M5113IL ATTENUATOR

ELECTRONIC VOLUME CIRCUIT

Q200 2SC3311A SWITCHING

Q201,202 2SD1450 MUTING

Q203 2SA1309A MUTING CONTROL

Q502 2SC3311A MOTOR DRIVE

Q503 2SA1309A MOTOR DRIVE

D507 MA165TA

FAN MOTOR

MOTOR CONTROL CIRCUIT

C INPUT/OUTPUT TERMINAL CIRCUIT

D MOTOR CONTROL/POWER AMP/ POWER SOURCE CIRCUIT

E TONE AMP/SUPER BASS AMP/FL CONTROL CIRCUIT

SYSTEM CONTROL CIRCUIT

TONE AMP CIRCUIT

SUPER BASS AMP CIRCUIT

F VOLUME CIRCUIT

H INP

G LED CIRCUIT

FL SADFV2217

D810~812 LN038417P1

D810 (44.1kHz) D811 (48kHz) D812 (32kHz)

To A (J801)

IC601 M50754-411SP MICRO COMPUTER

IC602 IC603 MN4013B LOGIC(F-FLOP)

Q601 Q602 Q604 2SC3311 SWITCHING

Q601,602 UN4111 SWITCHING

POWER AMP CIRCUIT

IC501 SV13204 POWER AMP

Q501 2SA992 RELAY DRIVE

Q611~617 UN4211 LED DRIVE

Q618,619 UN4111 LED DRIVE

D631~633,636,637 LN846RP-C

D634,635 LN0202RP2

D638 LN873RP-LS

J POWER SWITCH/SPEAKERS SWITCH/ HEADPHONES JACK CIRCUIT

S501 (SPEAKERS)

K SPEAKER TERMINAL CIRCUIT

CD·Phono signal line.

For (EG,EI) areas.

MAIN (8~16Ω)

SURROUND (8~16Ω)

REMOTE (8~16Ω)

SPEAKERS

POWER SOURCE CIRCUIT

Q701,705 2SD1265 REGULATOR

IC701 AN78M05R REGULATOR

Q703 UN4211 SWITCHING

Q702 2SB941 REGULATOR

Q704 2SB621 REGULATOR

H INPUT SELECT SWITCH/LED DRIVE CIRCUIT

I SURROUND/SUPER BASS SWITCH CIRCUIT

43 44 45 46 47 48 49 50 51 52 53 54 55 56

POWER AMP CIRCUIT

Power on
relay on
0V
4 sec

IC501
SV13204
POWER AMP

Q501
2SA992
RELAY DRIVE

J POWER SWITCH/SPEAKERS SWITCH/ HEADPHONES JACK CIRCUIT

S501 (SPEAKERS)
remote
main
HEADPHONES
For (EG,EI) areas.
S700 (POWER)

K SPEAKER TERMINAL CIRCUIT

CD·Phono signal line.
For (EG,EI) areas.
MAIN (8~16Ω)
SPEAKERS
SURROUND (8~16Ω)
REMOTE (8~16Ω)
L ch
R ch

Power Source For (XA,XB) areas.

T700
S701 (VOLTAGE ADJ)
F2 T 1.6A
F1 T 3.15A
For (XA) area.
(UNSWITCHED)
AC OUTLET
AC110/127/220/240V (50/60Hz)

Power Source For (EK,XL) areas.

T700
F1 T 1.6A
(SWITCHED)
AC OUTLET
AC 240V (50/60Hz)
For (EK) area.

Q701,705
2SD1265
REGULATOR

IC701
AN78M05R
REGULATOR

Q703
UN4211
SWITCHING

Q702
2SB941
REGULATOR

Q704
2SB621
REGULATOR

POWER SOURCE CIRCUIT

L AC IN/AC OUTLET TERMINAL CIRCUIT

T700
F1 T1.6A
F2 T2A
(UNSWITCHED)
AC OUTLET
AC 220V (50/60Hz)
For (EG,EI) areas.

Q611~617
UN4211
LED DRIVE

D631~633,636,637
LN846RP-C

D634,635
LN0202RP2

D638
LN873RP-LS

D639 (SURROUND)
D640 (SUPER BASS)
S609 SURROUND
S610 S.BASS

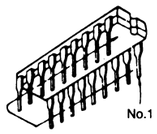
D639,640
EVQQLY07K
(with S609,610)

I SURROUND/SUPER BASS SWITCH CIRCUIT

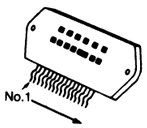
SU-X980D SU-X980D

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

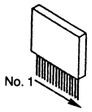
AN6552F AN6558F TC4066BF M5238P SVILM833M SVIBA4560F	8 pin	TC74HC4053AF TC74HC123F DN74LS145S SM5807ES PCM56P-J	16 pin
MN6636S	10 pin	TC9164N YM3623B	28 pin
AN6554 MN4030B MN4013B TC74HCU04F	14 pin	M50754-411SP	64 pin



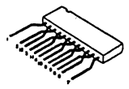
SV13204 | 18 pin



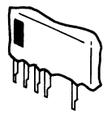
AN78M05R | 4 pin



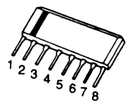
M5113L



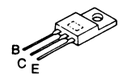
SVIH8DN2041B



AN6557



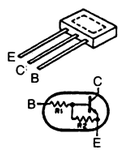
2SD1265
2SB941QR



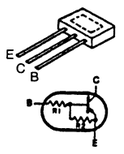
2SK301

1. DRAIN
2. GATE
3. SOURCE

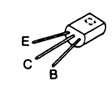
UN4211



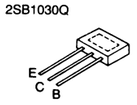
UN4111



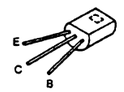
2SA992



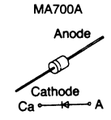
2SC3311A-Q
2SA1309AQS
2SD1450RS
2SD1330R
2SB1030Q



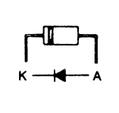
2SB621A-R



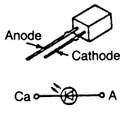
MA167
MA29WA
MA165
MA700A



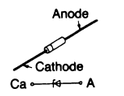
SVDS3V40



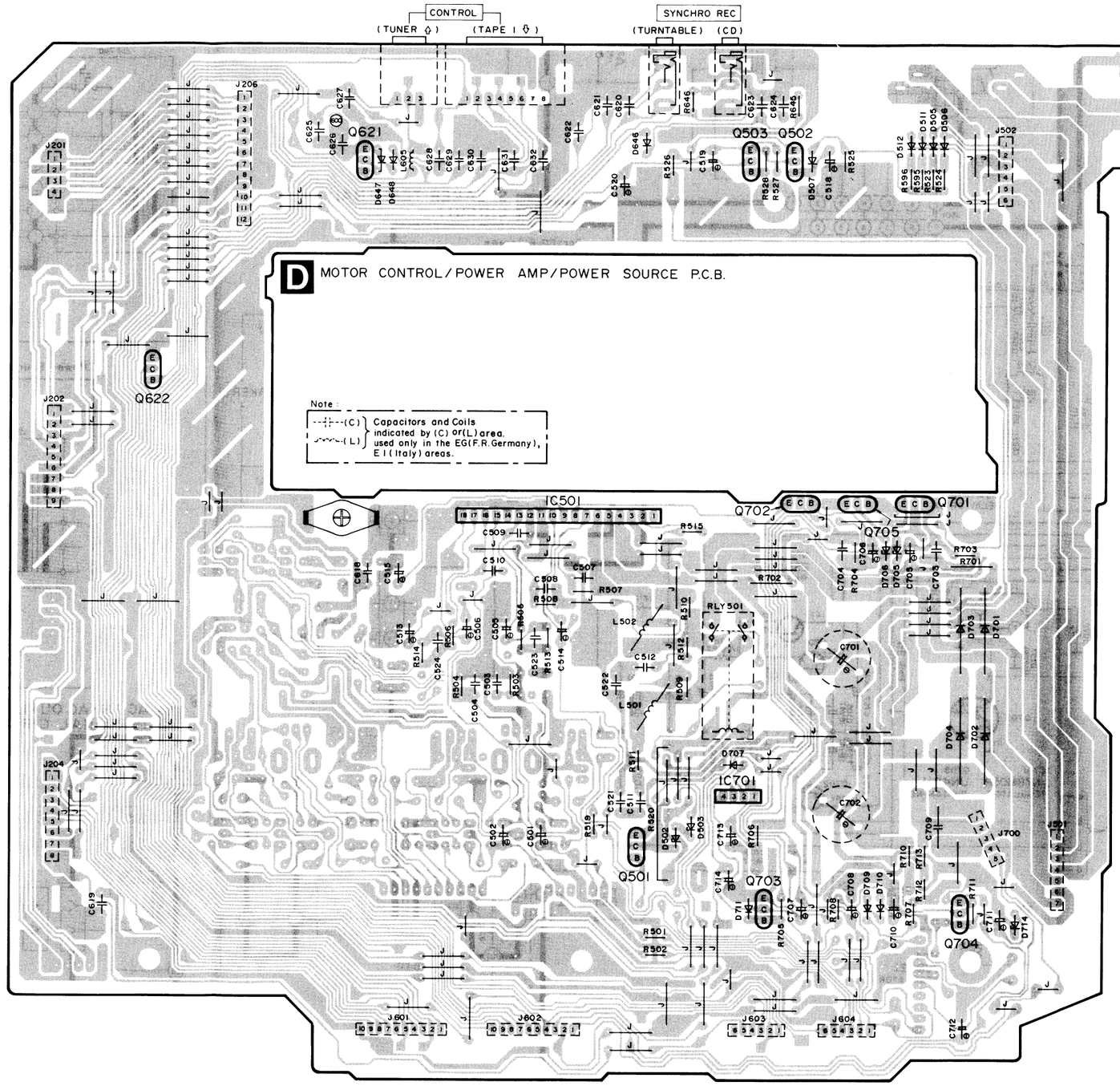
LN846RP-C
LN873RP-LS

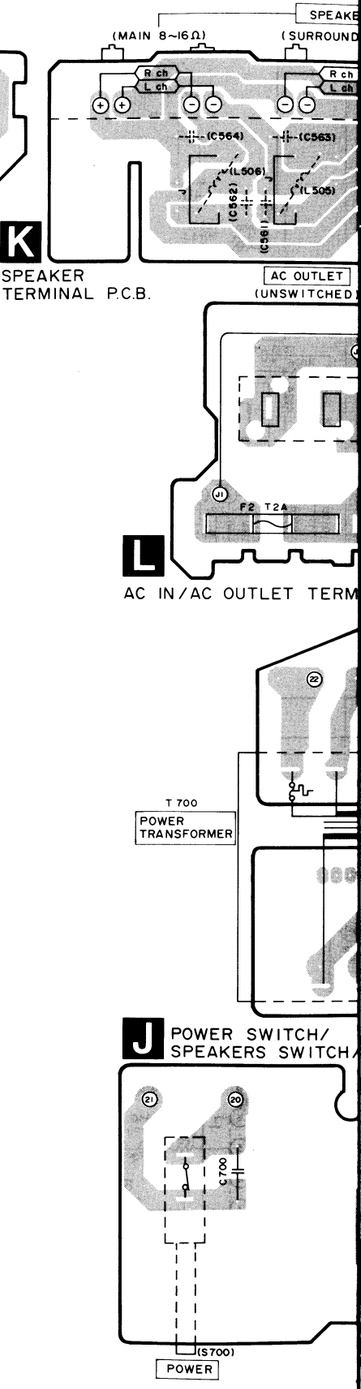


MA4051, MA4120
MA4082M, MA4100M
MA4140M, MA4300M

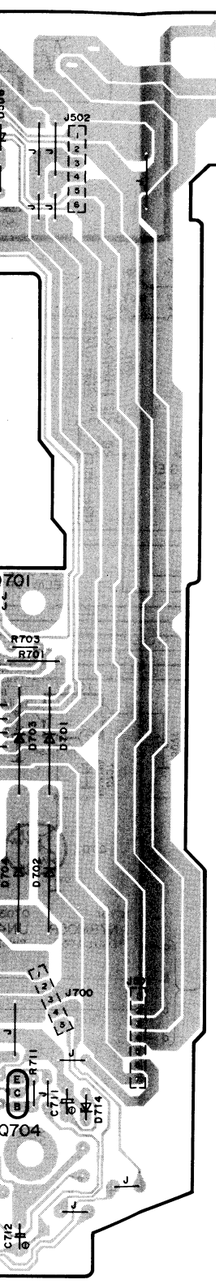


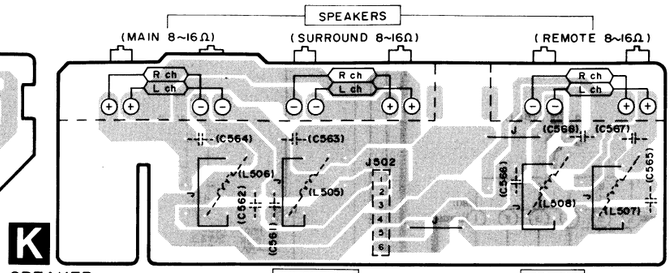
■ PRINTED CIRCUIT BOARDS

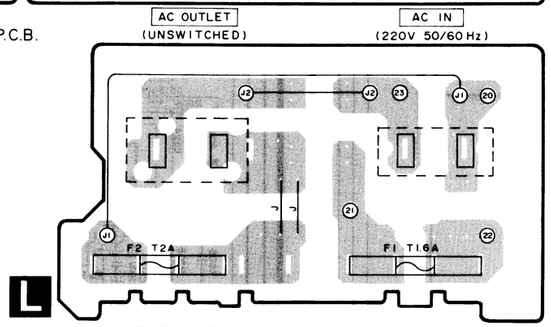


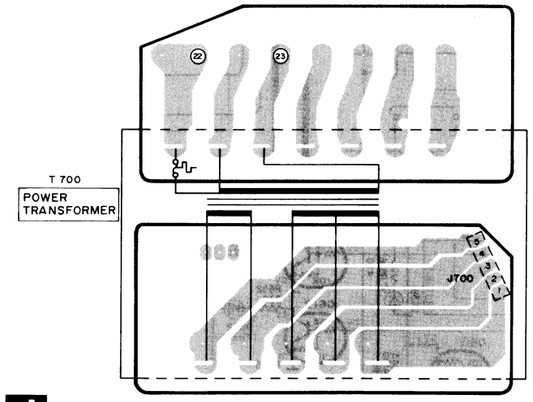


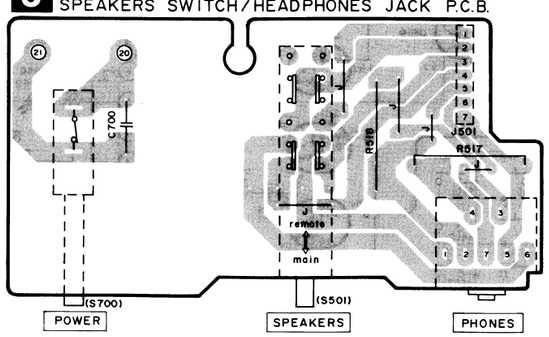
8 9 10 11 12 13 14 15 16 17 18 19 20 21

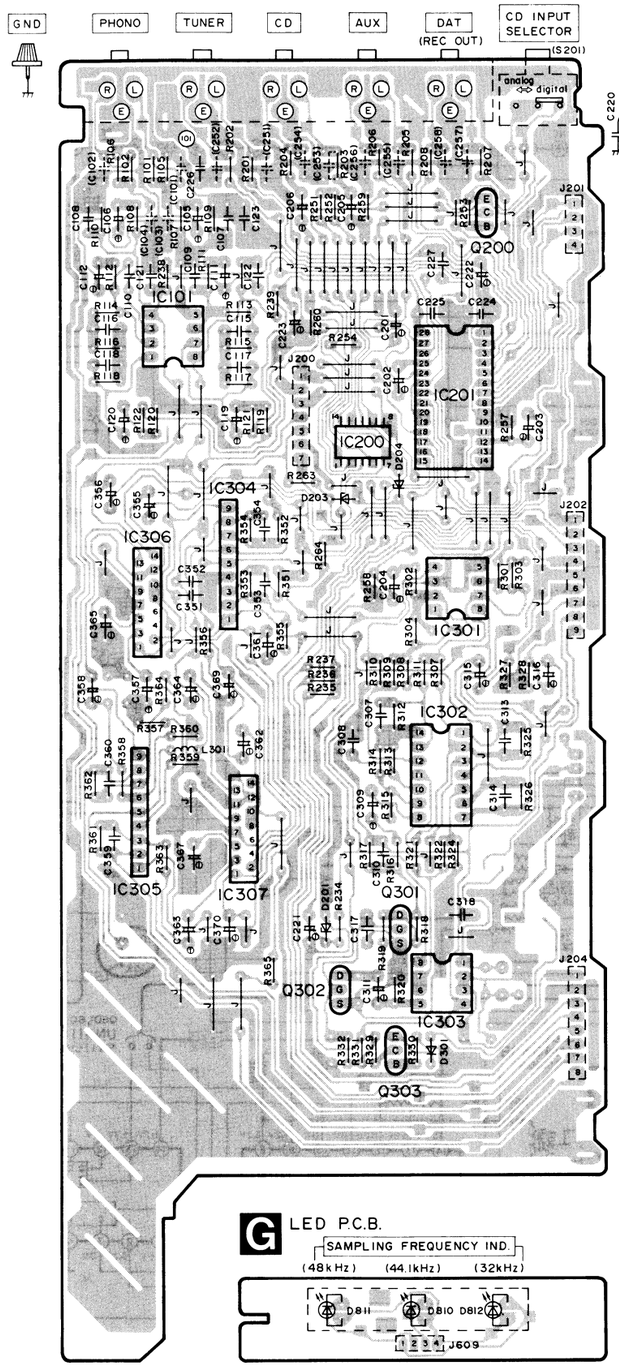


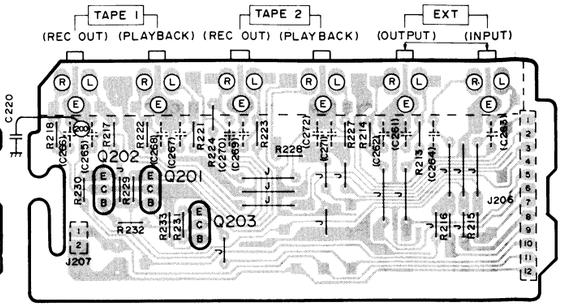


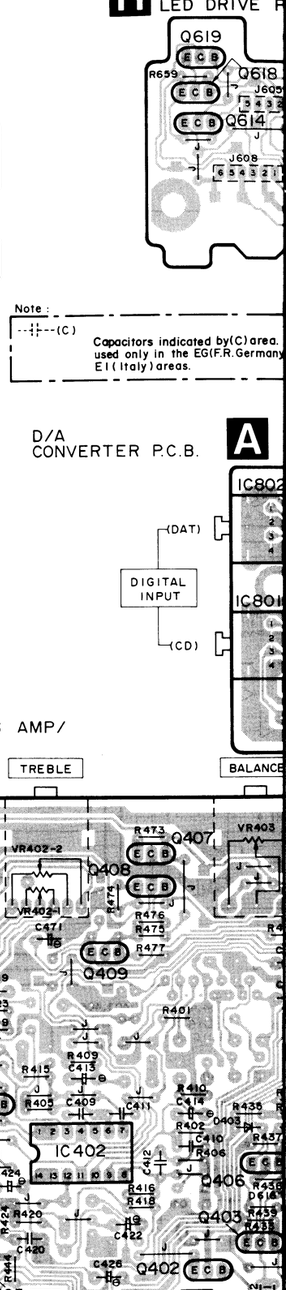


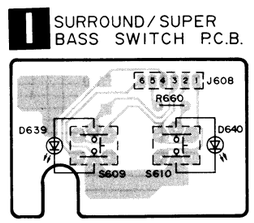


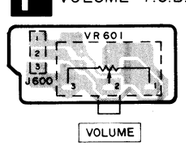


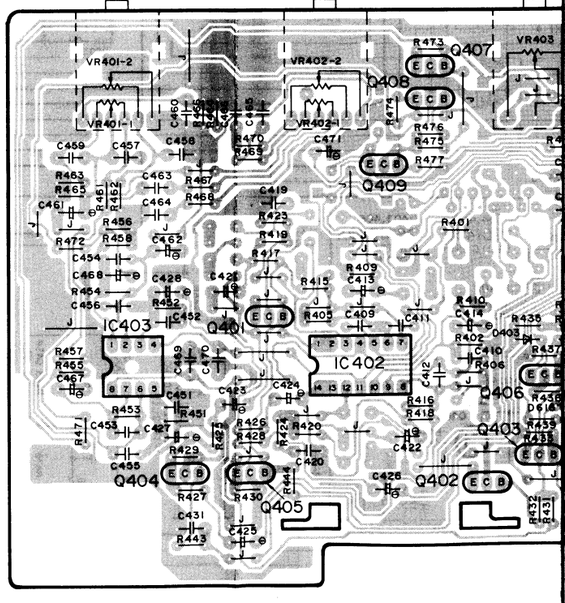






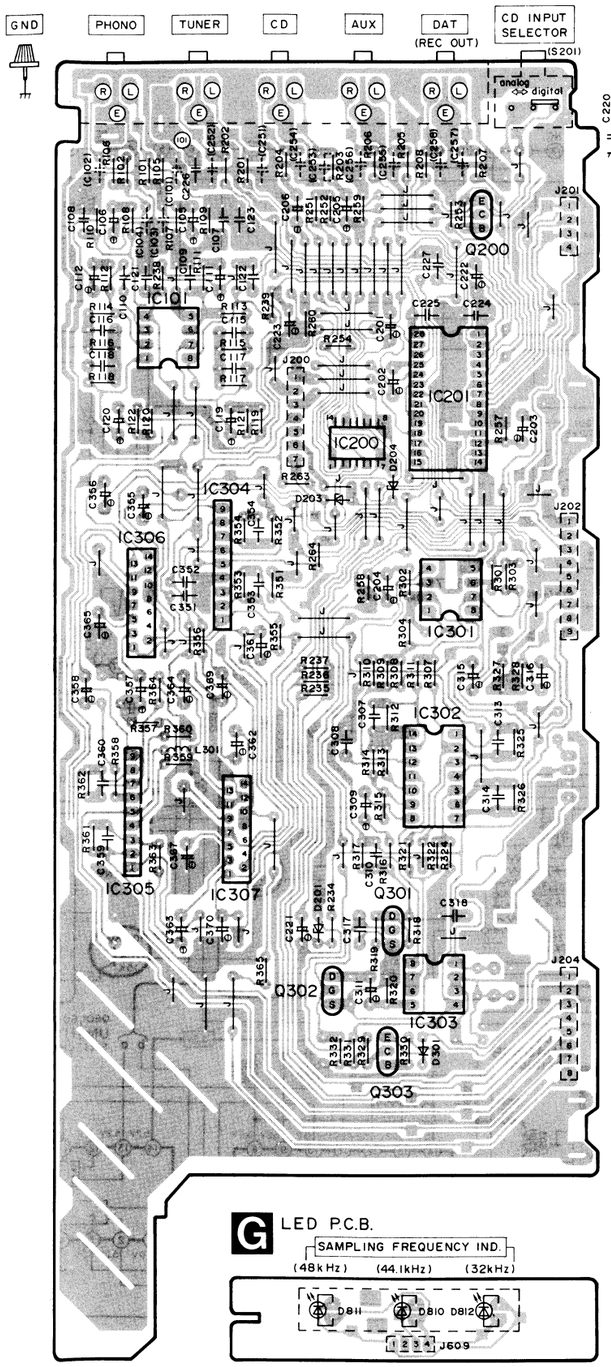




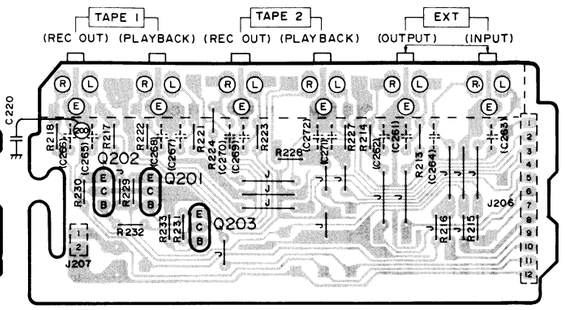


13 14 15 16 17 18 19 20 21 22 23 24 25 26

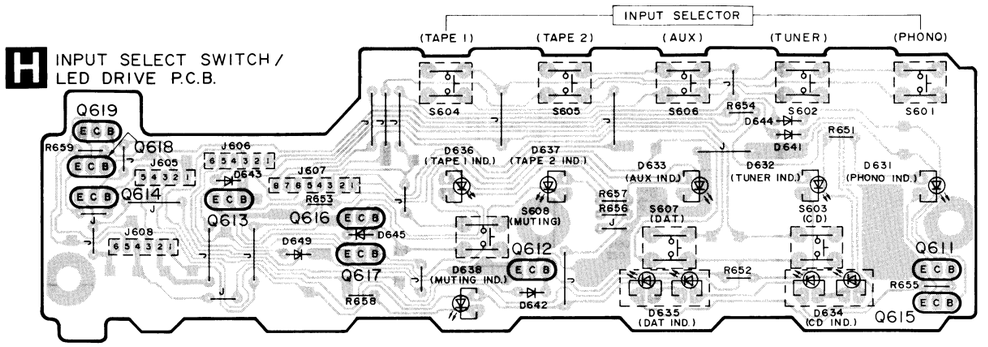
B PHONO EQ. AMP/ATTENUATOR/SRROUND AMP/ INPUT SELECTOR P.C.B.



C INPUT/OUTPUT TERMINAL P.C.B.



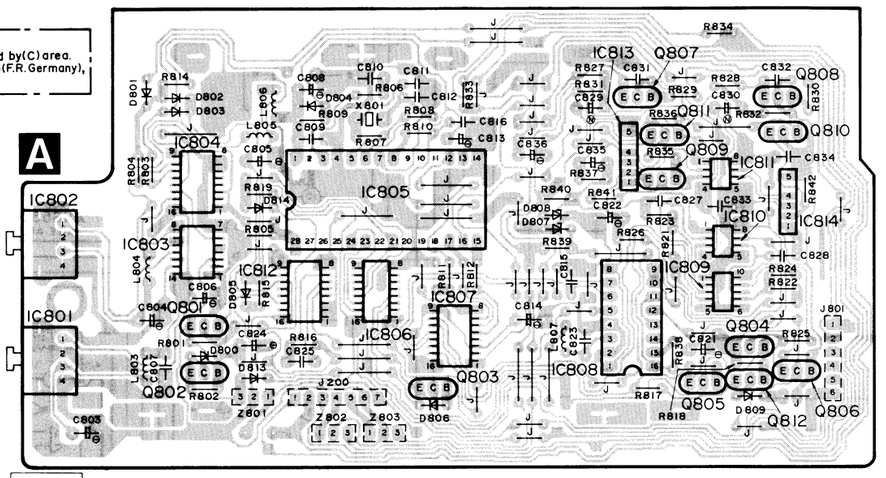
H INPUT SELECT SWITCH/ LED DRIVE P.C.B.



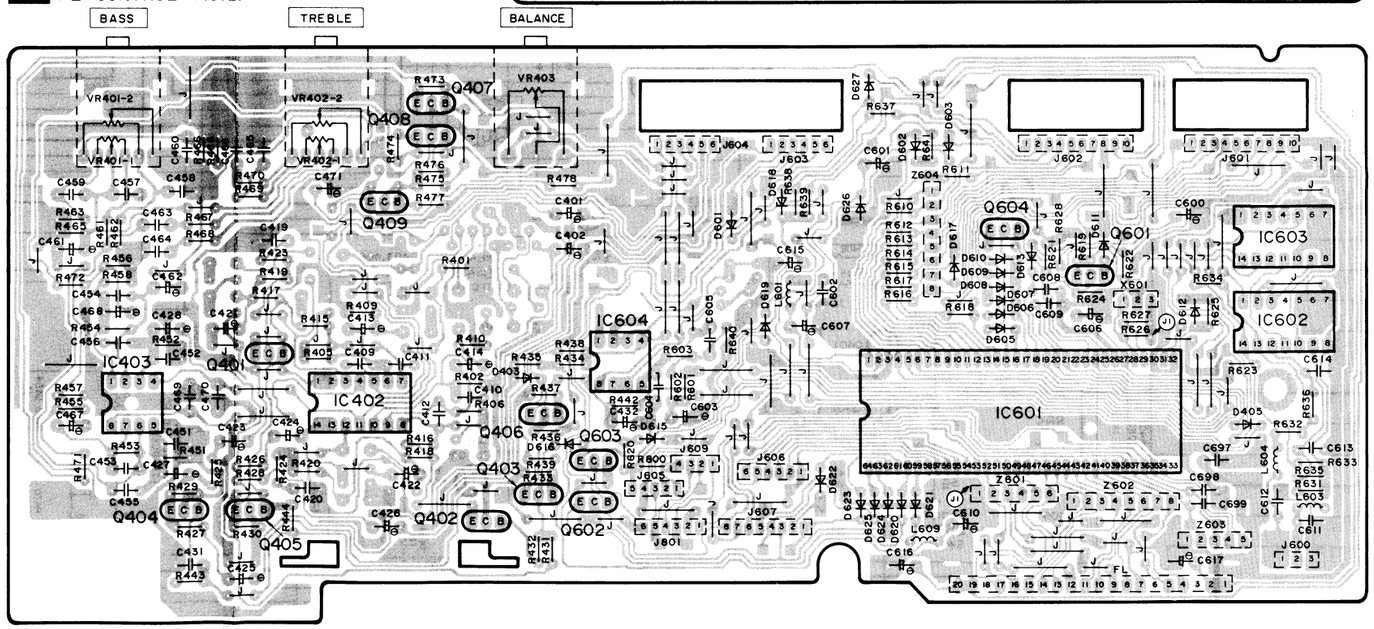
Note:
--||--(C) Capacitors indicated by(C) area. used only in the EG(F.R.Germany), EI(Italy) areas.

D/A CONVERTER P.C.B.

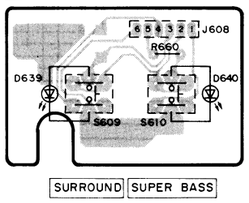
A



E TONE AMP/SUPER BASS AMP/ FL CONTROL P.C.B.

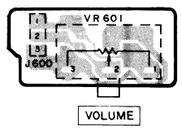


I SURROUND/SUPER BASS SWITCH P.C.B.

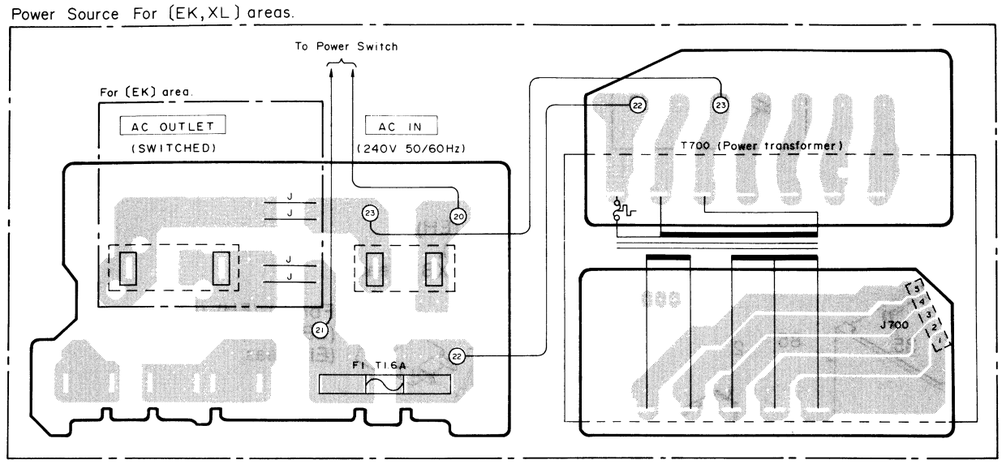


G LED P.C.B.

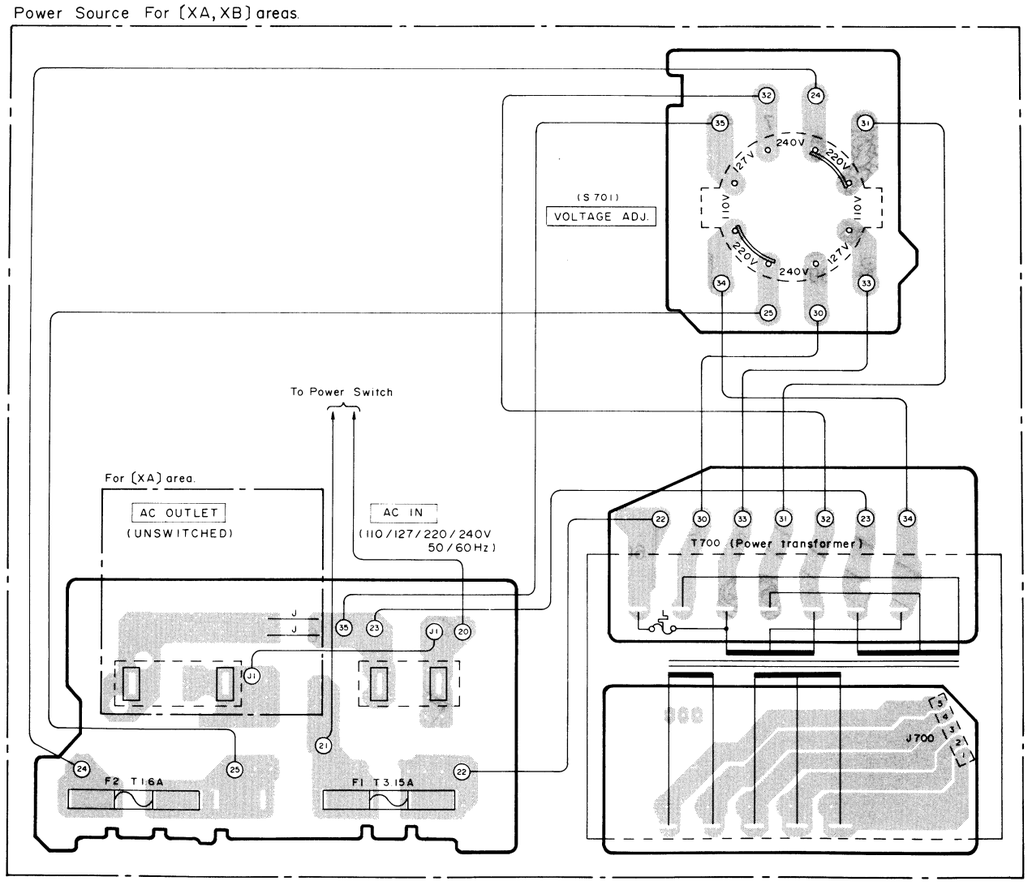
F VOLUME P.C.B.



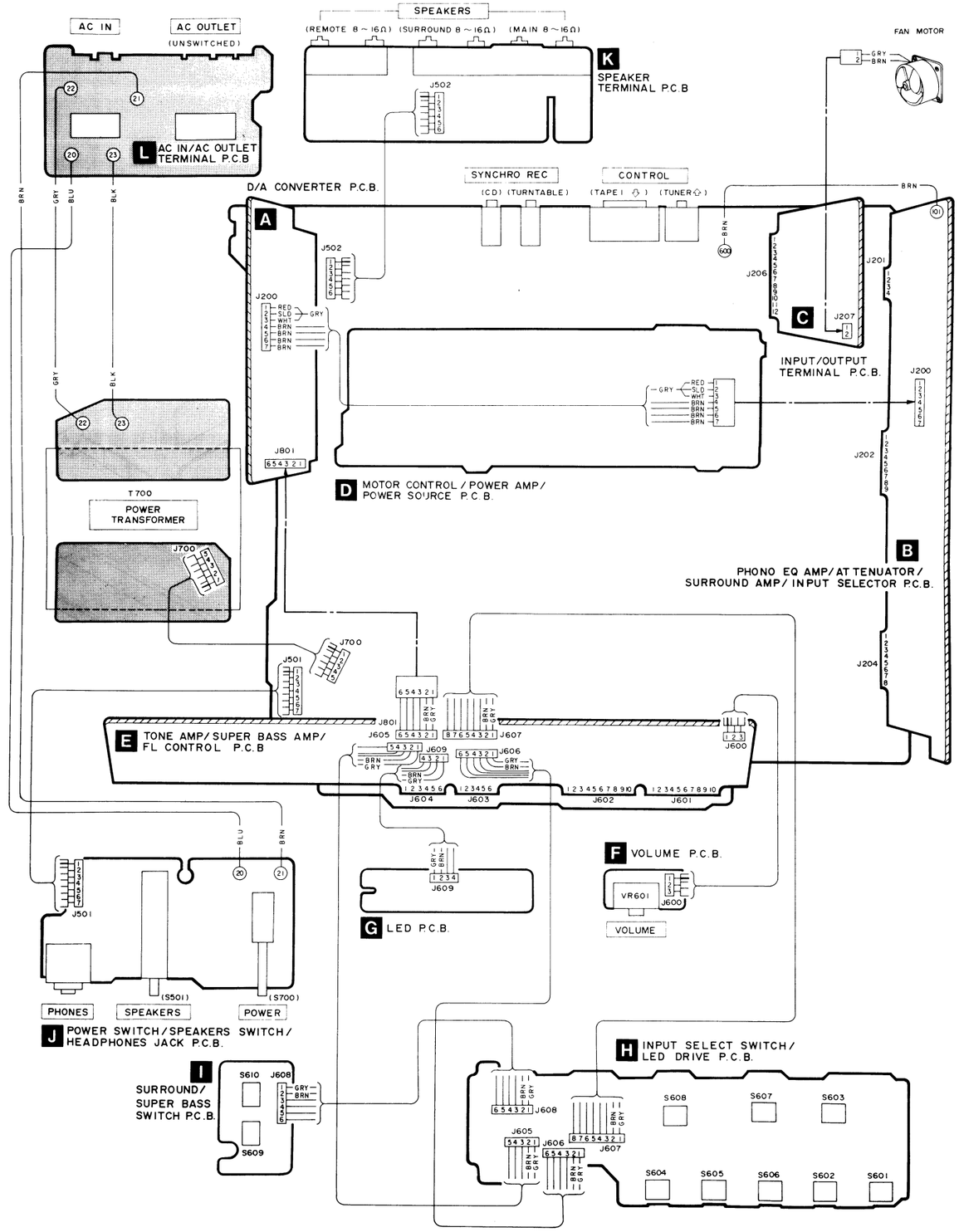
Power Source For (EK, XL) areas.



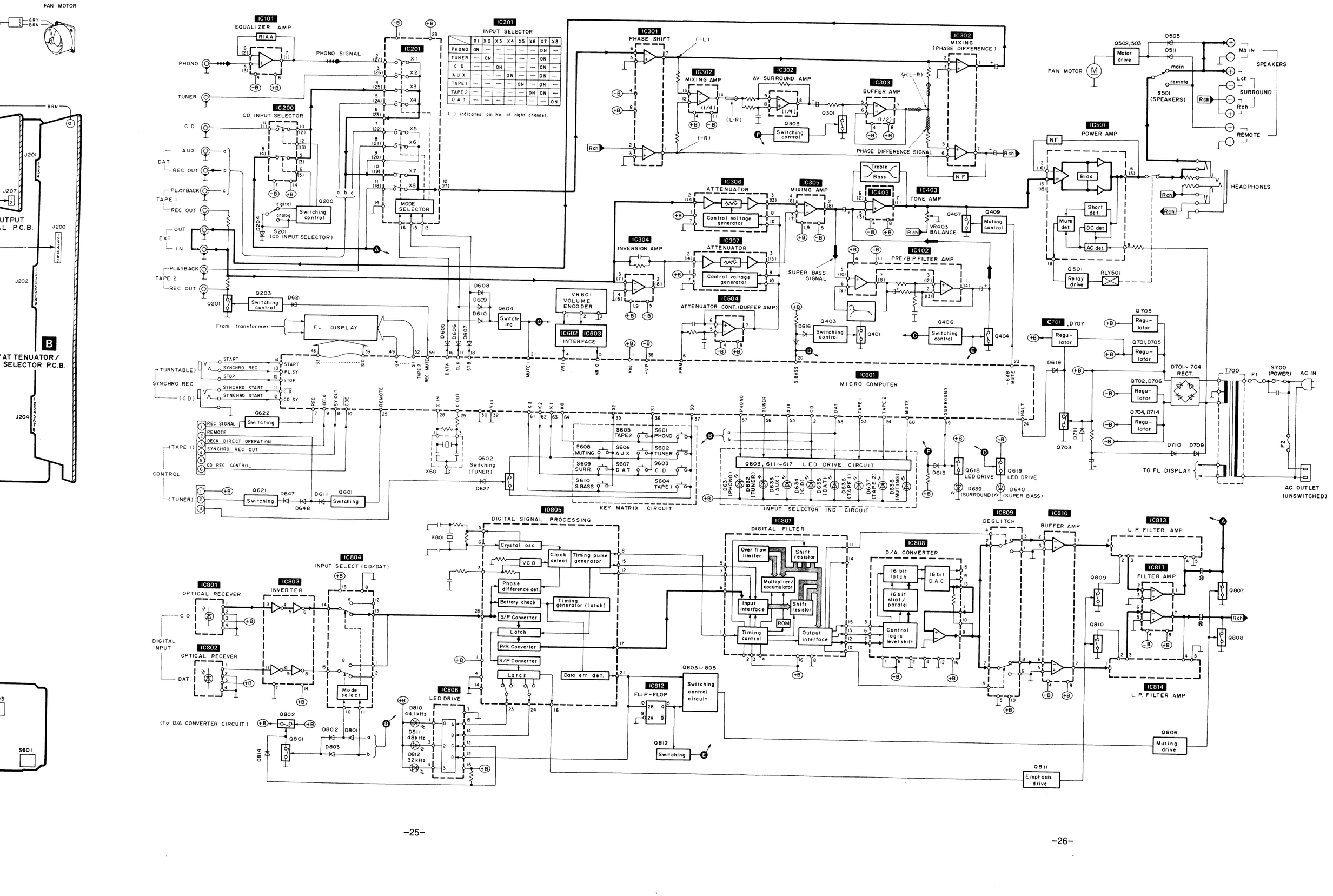
Power Source For (XA, XB) areas.



■ WIRING CONNECTION DIAGRAM



■ BLOCK DIAGRAM



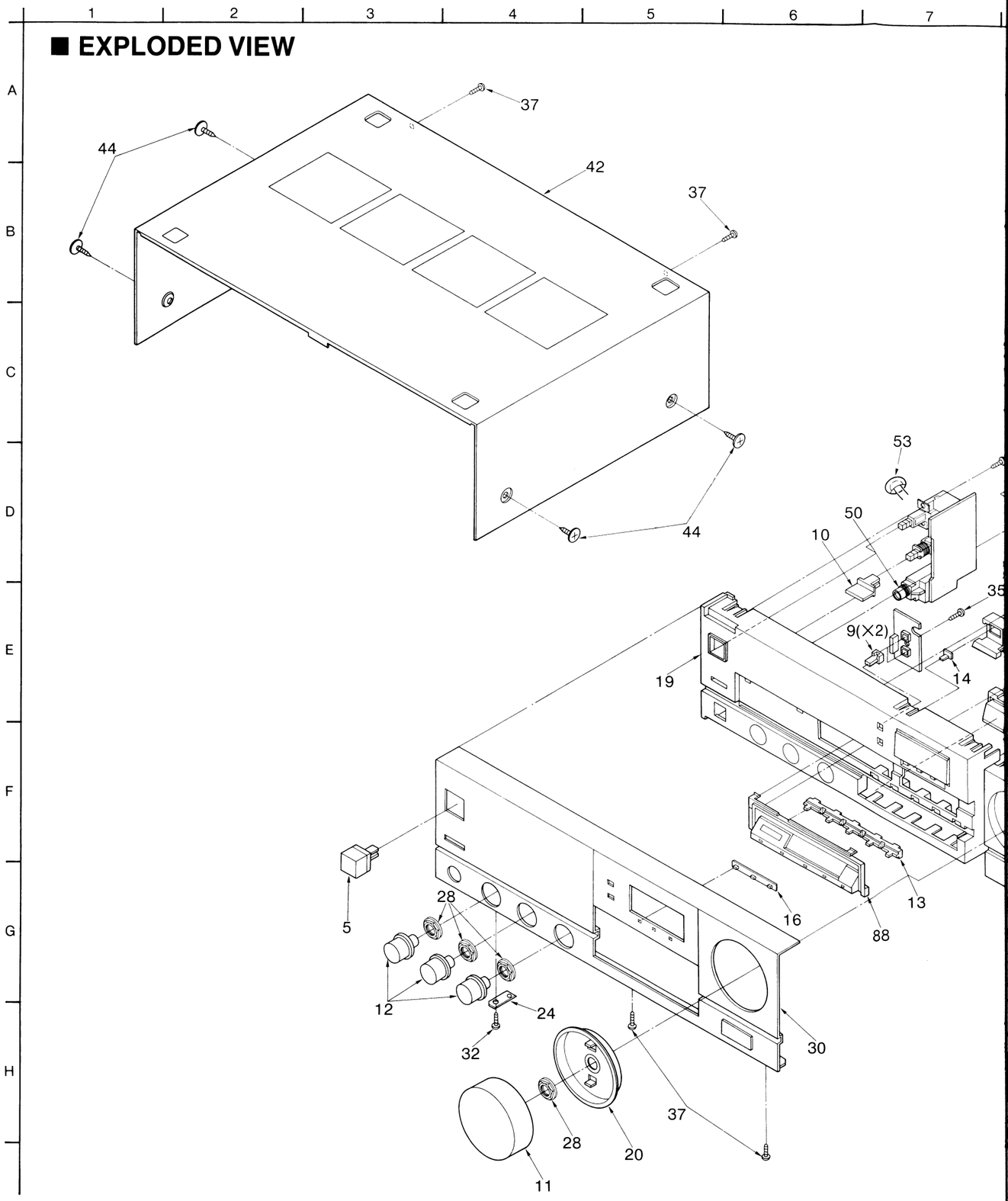
■ REPLACEMENT PARTS LIST

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

●CABINET PARTS LIST

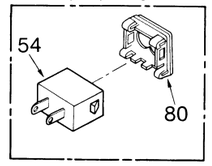
Ref. No.	Part No.	Description
CABINET AND CHASSIS		
1 (EK, E, EH, EF) (EB, EG, EI) (XA, XB)	SJS9231A	AC INLET COVER
2 (XA)	SGP7170-10A	PANEL
2 (E, EH, EF, EB) (EI)	SGP7170-6A	REAR PANEL
2 (EG)	SGP7170-6B	REAR PANEL
2 (EK)	SGP7170-7A	REAR PANEL
2 (XL)	SGP7170-8A	REAR PANEL
2 (XB)	SGP7170-9A	REAR PANEL
3	SKL307	FOOT
4 (E)	SKUUX980D-KE	BOTTOM BOARD
4 (EH, EF, EB) (EG, EI)	SKUUX980D-KH	BOTTOM BOARD
4 (EK)	SKUUX980D-KK	BOTTOM BOARD
4 (XL)	SKUUX980D-KL	BOTTOM BOARD
4 (XA, XB)	SKUUX980D-KX	BOTTOM BOARD
5	SBC666-1	BUTTON, POWER
6	SBC983B	BUTTON, SELECTOR
7	SBC1023	BUTTON, MUTING
8	SBC1024A	BUTTON, DIGITAL
9	SBC1025	BUTTON, BASS
10	SBC928	BUTTON, SPEAKER
11	SBN1224	KNOB, VOLUME
12	SBN1235	KNOB, TONE
13	SDL97	SMOKE PLATE
14	SDL98	SMOKE PLATE
15	SDL99	SMOKE PLATE
16	SDL100	SMOKE SLATE
19	SGXUX950-KE1	FRONT GRILLE
20	SGX9036	ORNAMENT
21	SHE187-2	HOLDER
23	SJP9205-2Y	SHORTING PIN
24	SMC1274	BRACKET
25	SMN2040	ANGLE
26	SNE2118	SCREW
27	SNE2123	SCREW
28	SNE4021-1	NUT
29	SUS832	SPRING
30	SGWUX980-KE	FRONT PANEL
31	XTB3+8FFR1	SCREW
32	XTBS3+8JFZ1	SCREW
33	XTB3+20J	SCREW
34	XTB3+6FFZ	SCREW
35	XTB3+8G	SCREW
36	XTB3+8J	SCREW
37	XTB3+8JFZ	SCREW
38	XTW3+8T	SCREW
39	XTWS3+8T	SCREW
40 (XA, XB)	XYN3+C6FZ	SCREW
42	SKC2070K162	CABINET
44	SNE2129-1	SCREW
47	SJF4818-1	TERMINAL BOARD
48	SJF4442-1	TERMINAL BOARD
49	SJJ141	M3 JACK
50	SJJ71E	JACK
51	SJS306	SOCKET
52	SJS804	SOCKET(8P)
53	SMX897	COVER
54 ⚠	SJS9231-1B	AC INLET
54 ⚠	SJS9234B	AC INLET
55 ⚠ (XA)	SJS9232B	AC OUTLET
55	SJS9332B	AC OUTLET
56	SJT388	FUSE HOLDER
58	XTW3+8T	SCREW
59	SMN2056	BRACKET
60	SMN2043	ANGLE
61	SJF3062-13N	TERMINAL BOARD
62	SMC6453	SHIELD PLATE
63	SMC6441	SHIELD PLATE
64	SME95	COVER
65	SME97-1	COVER
66	SHE143	FAN
67	MMN6C2RKMS	DC MOTOR
68	SUS271	SPRING
69	SGXUX950-KE2	FRONT GRILLE
70	SJS50680WL	CONNECTOR(6P)
70	SJS51080WL	CONNECTOR(10P)
72	SJT30543-V	CONNECTOR(5P)
72	SJT30740LX-V	CONNECTOR(7P)
74	SJF3062-22N	TERMINAL
75	SJT30439MB	CONNECTOR (4P)
75	SJT30839MB	CONNECTOR(8P)
75	SJT30939MB	CONNECTOR(9P)
75	SJT31239MB	CONNECTOR (12P)
76	SJT30647WL	CONNECTOR(6P)
76	SJT31047WL	CONNECTOR(10P)
77	SJT3213	CONNECTOR(2P)
77	SJT3613	CONNECTOR(6P)
77	SJT3709	CONNECTOR(7-P)
80 (XL)	SJS9234A	AC INLET COVER
81 ⚠ (E, EH, EF, EB) (EG, EI)	SJS9225	AC OUTLET
82 (XA)	SJS9330A	AC OUTLET COVER
82 (EK)	SJS9332A	AC OUTLET COVER
83	SMN2056-1	BRACKET
84	SMC6459	SHIELD PLATE
85	SMC6460	SHIELD PLATE
86	SGX7967	ORNAMENT
87	SUW3124	SHIELD PLATE
88	SGX7977	ORNAMENT
89	SHD3X36J	BRACING STRUT

■ EXPLODED VIEW

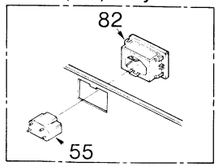


6 7 8 9 10 11 12 13 14 15 16 17 18 19

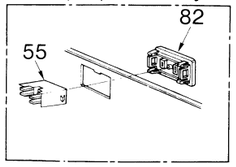
● For (XL) only.

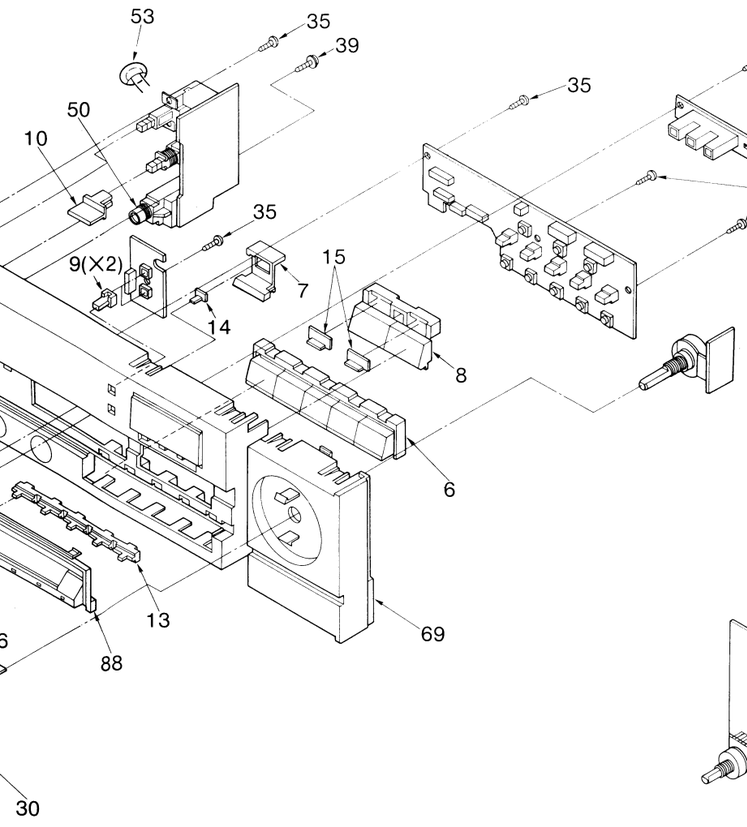


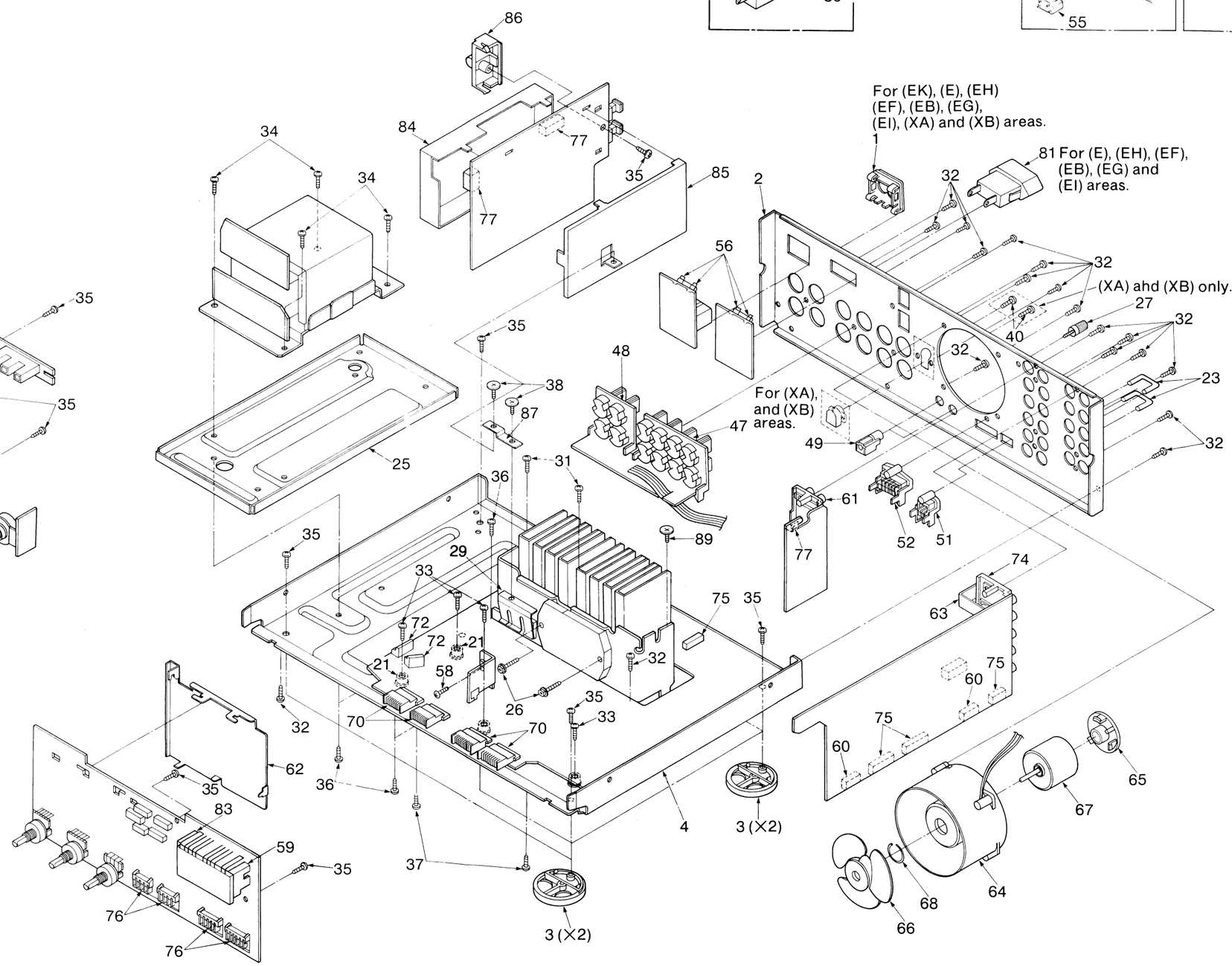
● For (EK) only.



● For (XA) area only.







■ FUNCTIONS OF IC TERMINALS

●IC806 (YM3623B) DIGITAL INTERFACE RECEPTION

(PU) terminals are "pulled up".

Pin No.	Terminal Name	I/O	Function
1	VDD1	——	This is the power connection terminal (+5 V).
2	ADJ	I	This terminal is for the adjustment of the VCO oscillation frequency, but it is not used in this unit.
3	VCO	I/O	This is the external condenser terminal for the VCO circuitry.
4	VSS2	——	This is the ground connection terminal of the system.
5	XO	O	This is the output terminal for the crystal vibrator (16.9344 MHz).
6	XI	I	This is the input terminal for the crystal vibrator.
7	KMODE	I (PU)	At a high level...the PLL circuitry is activated when the DIN terminal receives an input signal. Otherwise, the crystal vibrator is activated. At a low level...the crystal vibrator is activated, regardless of the DIN terminal input.
8	∅A	O	This terminal outputs a 16.9344-MHz frequency when the crystal vibrator functions. When the PLL circuitry is activated, the frequency varies according to the speed of input data of the DIN terminal (fs=about 16.9344 MHz when it is 44.2 kHz).
9	∅B	O	The frequency of this terminal is divided into a third of that of terminal ∅A when the crystal vibrator functions. When the PLL circuitry is activated, the frequency varies according to the speed of input data of the DIN terminal (fs=about 16.9344 when it is 44.2 kHz).
10	T1	I (PU)	This is the input terminal for checking the internal circuitry.
11	T2	I (PU)	This is the input terminal for checking the internal circuitry.
12	BCO	O	Used to output the time-clock signal from the DO terminal.
13	SYNC	O	Used to output the synchronization signal.
14	VSS1	O	This is the ground connection terminal of the system (+0 V).
15	L/R	O	At a high level...data on the left channel is output from the DO terminal. At a low level...data on the right channel is output from the DO terminal.
16	DEF	O	At a high level...input data is emphasized. At a low level...input data is not emphasized.
17	DO	O	Outputs 16-bit data.
18	WC	O	This is the terminal for checking data output to the DO terminal.
19	DIGR	O	This terminal outputs the signal for the right channel.
20	DIGL	O	This terminal outputs the signal for the left channel.
21	ERR	O	Error detection terminal. H=Error is found during parity check L=No errors
22	SEL	I (PU)	
23	S1	O	
24	S2	O	
25	SCK	O	Terminal for the clock-signal of the sub code output.
26	SSYNC	O	For the signal of the sub code.
27	SDO	O	For the output of sub code data.
28	DIN	I (PU)	For the input of data.

Input	Output		Output	
SEL	S1	Function	S2	Function
L	L	Copying is not possible	L	DC (except DAT)
	H	Copying is possible	H	DAT
H	L		L	The sampling frequency of the DIN input signal is 44.1 kHz.
	L		H	48 kHz
	H		H	32 kHz
	H		L	——

●IC601 (M50754-411SP)

Pin No.	I/O	Terminal Name	Function
1	I	V_{DD}	To be connected to a power supply.
2	O	LCD	This is the output terminal for the LED selector indicator of the CD player. At a "HI" level ..... the LED lights up.
3	——	CS2	For ground connection.
4	I	VR1	These are the terminals for the rotary encoder of the volume of VR601.
5		VR0	
6	O	PWM	This terminal outputs the signal for the control of the volume and balance
7	I	$\overline{REC}$	This is the terminal for the detection of recording on the deck.
8	O	SY OUT	This is the terminal for synchro recording on the deck.
9	I	$\overline{DECK}$	This is the terminal for direct operations on the deck.
10	I	CDE	Outputs the signal for the control of CD editing.
11	I	$\overline{CD}$	These are the terminals for the start of synchronization on the CD unit.
12		CD. SY.	
13	I	PL. SY.	These are the terminals for sync recording on the player.
14	O	PL. START	
15	O	PL. $\overline{STOP}$	
16	O	DATA	CLK: This terminal outputs the clock signal for reading serial data. DATA: This terminal outputs the serial data. STB: This terminal outputs the pulse for the control of the setting of the analog switch. The serial data inputted into IC201 is latched by the STB pulse and the switch is set to ON according to data.
17		CLK	
18		STB	
19	O	$\overline{SURR}$	Outputs the signal for the control of SURROUND. At a "LOW" level ..... SURROUND is ON.
20	O	S. $\overline{LOUD}$	Outputs the signal for the control of SUPER DYNAMIC SOUND. At a "LOW" level ..... SUPER DYNAMIC SOUND is ON.
21	O	$\overline{MUT}$ 1	Outputs the signal for the control of muting.
22	——	SYN OUT 2	Unused.
23	O	MUTE	Outputs the −6 dB signal for the control of attenuated muting.
24	I	$\overline{HALT}$	This is the terminal for the detection of power supply.
25	I	REMOTE	Inputs data from the remote controller.
26	——	CN VSS	For ground connection.
27	I	$\overline{RESET}$	This terminal inputs the reset signal.
28	I	X IN	These are the I/O terminals for the oscillating clock signal.
29	O	X OUT	
30	——	X_C IN	Unused.
31		X_C OUT	

•IC601 (M50754-411SP)

Pin No.	I/O	Terminal Name	Function
1	I	V_{DD}	To be connected to a power supply.
2	O	LCD	This is the output terminal for the LED selector indicator of the CD player. At a "HI" level ..... the LED lights up.
3	——	CS2	For ground connection.
4	I	VR1	These are the terminals for the rotary encoder of the volume of VR601.
5		VR0	
6	O	PWM	This terminal outputs the signal for the control of the volume and balance
7	I	$\overline{REC}$	This is the terminal for the detection of recording on the deck.
8	O	SY OUT	This is the terminal for synchro recording on the deck.
9	I	$\overline{DECK}$	This is the terminal for direct operations on the deck.
10	I	CDE	Outputs the signal for the control of CD editing.
11	I	$\overline{CD}$	These are the terminals for the start of synchronization on the CD unit.
12		CD. SY.	
13	I	PL. SY.	These are the terminals for sync recording on the player.
14	O	PL. START	
15	O	PL. $\overline{STOP}$	
16	O	DATA	CLK: This terminal outputs the clock signal for reading serial data. DATA: This terminal outputs the serial data. STB: This terminal outputs the pulse for the control of the setting of the analog switch. The serial data inputted into IC201 is latched by the STB pulse and the switch is set to ON according to data.
17		CLK	
18		STB	
19	O	$\overline{SURR}$	Outputs the signal for the control of SURROUND. At a "LOW" level ..... SURROUND is ON.
20	O	S. $\overline{LOUD}$	Outputs the signal for the control of SUPER DYNAMIC SOUND. At a "LOW" level ..... SUPER DYNAMIC SOUND is ON.
21	O	$\overline{MUT}$ 1	Outputs the signal for the control of muting.
22	——	SYN OUT 2	Unused.
23	O	MUTE	Outputs the −6 dB signal for the control of attenuated muting.
24	I	$\overline{HALT}$	This is the terminal for the detection of power supply.
25	I	REMOTE	Inputs data from the remote controller.
26	——	CN VSS	For ground connection.
27	I	$\overline{RESET}$	This terminal inputs the reset signal.
28	I	X IN	These are the I/O terminals for the oscillating clock signal.
29	O	X OUT	
30	——	X_C IN	Unused.
31		X_C OUT	

Pin No.	I/O	Terminal Name	Function
32	——	V_{SS}	For ground connection.
33	——	NC	Unused.
35 ~ 37	O	S0 ~ S2	These are the key matrix terminals for input selection.
61 ~ 64	I	K0 ~ K3	
38	I	V_P	The signal which pulls down the voltage is inputted into this terminal.
39 ~ 46	O	S3 ~ S10	These terminals output the signals for the control of the multi-digital display.
49 ~ 52		G0 ~ G3	
53	O	L TAPE	Outputs the signal for the control of the TAPE LED. At a "HI" level ..... the LED lights up.
54	O	L VTR	Outputs the signal for the control of the VTR LED. At a "HI" level ..... the LED lights up.
55	O	L VD	Outputs the signal for the control of the VD LED. At a "HI" level ..... the LED lights up.
56	O	L TUNER	Outputs the signal for the control of the TUNER LED. At a "HI" level ..... the LED lights up.
57	O	L PHONO	Outputs the signal for the control of the PHONO LED. At a "HI" level ..... the LED lights up.
58	O	L DAT	Outputs the signal for the control of the DAT LED. At a "HI" level ..... the LED lights up.
59	O	VTR REC MUTE	Outputs the signal for muting the VTR recording.
60	O	L MUTE	Outputs the signal for the control of the MUTING LED. At a "HI" level ..... the LED lights up.

I \ O	35	36	37
61	SUPER DYNAMIC SOUND	——	TAPE
62	SURROUND	DAT	CD
63	MUTING	VD	TUNER
64	——	VTR	PHONO

• SM5807ES (Digital Filter)

Pin No.	Mark	I/O	Function
1	XT	I	Oscillator input circuit
2	XT	O	Oscillator output circuit
3	CKSL	I	CKSL = H: 16.9344MHz or 17.2872MHz crystal oscillator for XT or external input CKSL = L: 8.4672MHz or 8.6436MHz crystal oscillator for XT or external input
4	CKO	O	Clock output
5	LRCI	I	Synchronous clock input
6	DIN	I	Serial data input
7	BCKI	I	Serial input bit clock input
8	VSS	—	GND terminal (0V)

Pin No.	Mark	I/O	Function
9	SCSL	I	SCSL = H: System clock=192fs (fs: sampling frequency) SCSL = L: System clock=196fs (fs: sampling frequency)
10	DGR	O	Rch deglitch signal (176.4kHz)
11	DGL	O	Lch deglitch signal (176.4kHz)
12	DOUT	O	Serial data output
13	WDCO	O	Output control clock (352.8kHz)
14	LRCO	O	Output control clock (176.4kHz)
15	BCKO	O	Serial output bit clock (8.4672MHz or 8.6436MHz)
16	VDD	—	Power supply terminal

■ REPLACEMENT PARTS LIST

●ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC101	AN6558F	I.C. PHONO EQ AMP
IC200	TC4066BF	INTEGRATED CIRCUIT, CD INPUT SE
IC201	TC9164N	I.C. INPUT SEL.
IC301	M5238P	I.C. PHASE SHIFT
IC302	AN6554F	I.C. MIXING AMP
IC303	AN6558F	I.C. BUFFER AMP
IC304	AN6557F	I.C. BUFFER AMP
IC305	AN6557F	I.C. MIXING AMP
IC306	M51131L	I.C. ATTENUATOR
IC307	M51131L	I.C. ATTENUATOR
IC402	AN6554F	I.C. PRE AMP
IC403	AN6558F	I.C. TONE AMP
IC501	SVI3204	INTEGRATED CIRCUIT, POWER
IC601	M50754-411SP	I.C. MICRO COM.
IC602	MN4030B	I.C., LOGIC
IC603	MN4013B	I.C. LOGIC
IC604	AN6552F	I.C. BUFFER AMP
IC701	AN78M05R	I.C. REGULATOR
IC801	SVITORX172	I.C. OPTICAL REC.
IC802	SVITORX172	I.C. OPTICAL REC.
IC803	TC74HCU04F	I.C. INVERTER
IC804	TC74HC4053AF	I.C., DIGITAL INPUT
IC805	YM3623B	I.C. DIGITAL SIGNAL
IC806	DN74LS145S	INTEGRATED CIRCUIT, LED DRIVE
IC807	SM5807ES	I.C. DIGITAL FIL.
IC808	PCM56P-J	I.C. D/A CON.
IC809	MN6636S	I.C. DEGLITCH
IC810	SVILM833M	I.C. BUFFER AMP
IC811	SVIBA4560F	I.C. EMPHASIS DRIVE
IC812	TC74HC123F	I.C. FLIP-FLOP
IC813	SVIH8DN2041B	I.C. LOW PASS FILTER
IC814	SVIH8DN2041B	I.C. LOW PASS FILTER
TRANSISTORS		
Q200	2SC3311A-Q	TRANSISTOR
Q201	2SD1450RS	TRANSISTOR
Q202	2SD1450RS	TRANSISTOR
Q203	2SA1309AQS	TRANSISTOR
Q301	2SK301	TRANSISTOR
Q302	2SK301	TRANSISTOR
Q303	2SA1309AQS	TRANSISTOR
Q401	2SD1330R	TRANSISTOR
Q402	2SD1330R	TRANSISTOR
Q403	2SA1309AQS	TRANSISTOR
Q404	2SD1330R	TRANSISTOR
Q405	2SD1330R	TRANSISTOR
Q406	2SA1309AQS	TRANSISTOR
Q407	2SD1330R	TRANSISTOR
Q408	2SD1330R	TRANSISTOR
Q409	2SA1309AQS	TRANSISTOR
Q501	2SA992EFP	TRANSISTOR
Q502	2SC3311A-Q	TRANSISTOR
Q503	2SA1309AQS	TRANSISTOR
Q601	UN4111	TRANSISTOR
Q602	UN4111	TRANSISTOR
Q603	UN4211	TRANSISTOR
Q604	2SC3311A-Q	TRANSISTOR
Q611	UN4211	TRANSISTOR
Q612	UN4211	TRANSISTOR
Q613	UN4211	TRANSISTOR
Q614	UN4211	TRANSISTOR
Q615	UN4211	TRANSISTOR
Q616	UN4211	TRANSISTOR
Q617	UN4211	TRANSISTOR
Q618	UN4111	TRANSISTOR
Q619	UN4111	TRANSISTOR
Q621	2SC3311A-Q	TRANSISTOR
Q622	UN4211	TRANSISTOR
Q701	2SD1265-P	TRANSISTOR
Q702	2SB941PQR	TRANSISTOR
Q703	UN4211	TRANSISTOR
Q704	2SB621A-R	TRANSISTOR
Q705	2SD1265-P	TRANSISTOR
Q801	UN4211	TRANSISTOR
Q802	2SB1030Q	TRANSISTOR
Q803	2SA1309AQS	TRANSISTOR
Q804	UN4211	TRANSISTOR
Q805	UN4211	TRANSISTOR
Q806	UN4111	TRANSISTOR
Q807	2SD1330R	TRANSISTOR
Q808	2SD1330R	TRANSISTOR
Q809	2SD1330R	TRANSISTOR
Q810	2SD1330R	TRANSISTOR
Q811	UN4111	TRANSISTOR
Q812	2SA1309AQS	TRANSISTOR
DIODES		
D201	MA4051-M	DIODE
D203	MA4082M	DIODE
D204	MA4082M	DIODE
D301	MA165	DIODE
D403	MA165	DIODE
D405	MA165	DIODE
D502	MA4120	DIODE
D503	MA4120	DIODE
D505	MA167	DIODE
D506	MA167	DIODE
D507	MA165	DIODE
D511	MA167	DIODE
D512	MA167	DIODE
D601	MA165	DIODE
D602	MA165	DIODE
D603	MA165	DIODE
D605	MA165	DIODE
D606	MA165	DIODE
D607	MA165	DIODE
D608	MA700A	DIODE
D609	MA700A	DIODE
D610	MA700A	DIODE
D611	MA165	DIODE
D612	MA165	DIODE
D613	MA165	DIODE
D615	MA165	DIODE
D616	MA165	DIODE
D617	MA165	DIODE
D618	MA4100M	DIODE
D619	MA165	DIODE
D620	MA165	DIODE
D621	MA165	DIODE
D622	MA165	DIODE
D623	MA165	DIODE
D624	MA165	DIODE
D625	MA165	DIODE
D626	MA165	DIODE
D627	MA165	DIODE
D631	LN846RP-C	L.E.D
D632	LN846RP-C	L.E.D
D633	LN846RP-C	L.E.D
D634	LN0202RP2	DIODE, GAASP
D635	LN0202RP2	DIODE, GAASP
D636	LN846RP-C	L.E.D
D637	LN846RP-C	L.E.D
D638	LN873RP-LS	DIODE
D641	MA165	DIODE
D642	MA165	DIODE
D643	MA165	DIODE
D644	MA165	DIODE
D645	MA165	DIODE
D646	MA165	DIODE
D647	MA165	DIODE
D648	MA165	DIODE
D649	MA165	DIODE
D701 ⚠	SVDS3V40	RECTIFIER
D702 ⚠	SVDS3V40	RECTIFIER
D703 ⚠	SVDS3V40	RECTIFIER
D704 ⚠	SVDS3V40	RECTIFIER
D705	MA4140-M	DIODE
D706	MA4140-M	DIODE
D707	MA29WA	DIODE
D709	MA167	DIODE
D710	MA167	DIODE
D711	MA165	DIODE
D714	MA4300M	DIODE
D800	MA165	DIODE
D801	MA165	DIODE
D802	MA165	DIODE
D803	MA165	DIODE
D804	MA165	DIODE
D805	MA165	DIODE
D806	MA29WA	DIODE
D807	MA4051-M	DIODE
D808	MA4051-M	DIODE
D809	MA165	DIODE
D810	LN038417P1	DIODE
D811	LN038417P1	DIODE
D812	LN038417P1	DIODE
D813	MA29WA	DIODE
D814	MA700A	DIODE
VARIABLE RESISTORS		
VR401	EWC2XAF20C15	V.R
VR402	EWC2XAF20C15	V.R
VR403	EWHFDAF20G15	V.R
VR601	EVQWX2F2045B	V.R.
COILS AND TRANSFORMERS		
L301	ELEXT100KA	COIL
L501	SLQY07G-40	CHOKE COIL
L502	SLQY07G-40	CHOKE COIL
L505 (EG, EI)	SLQY07G-40	CHOKE COIL
L506 (EG, EI)	SLQY07G-40	CHOKE COIL
L507 (EG, EI)	SLQY07G-40	CHOKE COIL
L508 (EG, EI)	SLQY07G-40	CHOKE COIL
L601	ELEXH101KA	COIL
L603	ELEXH330KA	COIL
L604	ELEXH330KA	COIL
L605	ELEPK1R2MA	COIL
L609	ELEXH330KA	COIL
L803	ELEXT470KA	COIL
L804	ELEXT470KA	COIL
L805	ELEXT470KA	COIL
L806	ELEXH101KA	COIL
L807	ELEXH101KA	COIL
T700 ⚠ (EK, XL)	SLT5N484-W	POWER TRANSFORMER
T700 ⚠ (E, EH, EF, EB) (EG, EI)	SLT5N485-W	POWER TRANSFORMER
T700 ⚠ (XA, XB)	SLT5N486-W	POWER TRANSFORMER
COMPONENT COMBINATIONS		
Z601	EXFP5331MW	COMBINATION PART
Z602	EXFP7331MW	COMPONENT COMBINATION
Z603	EXBF5E103J	COMBINATION PART
Z604	EXBF8E103J	10KΩ X 8
Z801	EXCEMT103DC	CNMBINATION COM
Z802	EXCEMT103DC	CNMBINATION COM
Z803	EXCEMT103DC	CNMBINATION COM
DISPLAYS		
FL1	SADFV217	DISPLAY TUBE
FUSES		
F1 ⚠	XBA2C16TB0	FUSE 250V, A1.6A
F1 ⚠ (XA, XB)	XBA2C31TB0	FUSE 250V, T3.15A
F2 ⚠ (XA, XB)	XBA2C16TB0	FUSE 250V, A1.6A
F2 ⚠ (E, EH, EF, EB) (EG, EI)	XBA2C20TB0	FUSE 250V, T2A
SWITCHES		
S201	SSS153	SW
S501	SSH1073	SW, SPEAKER
S601	EVQQB005R	SW
S602	EVQQB005R	SW
S603	EVQQB005R	SW
S604	EVQQB005R	SW
S605	EVQQB005R	SW
S606	EVQQB005R	SW
S607	EVQQB005R	SW
S608	EVQQB005R	SW
S609	EVQQLY07K	SPECIAL SW
S610	EVQQLY07K	SPECIAL SW
S700 ⚠	SSH1071	SW, POWER
S701 ⚠ (XA, XB)	ESE37263	SW, VOLTAGE SEL.
RELAYS		
RL501	SSY134	RELAY
OTHERS		
X601	EF0FC4004A4	CERAMIC FILTER
X801	SVQAT1923	CRYSTAL OSCILLATOR

●PACKING PARTS LIST

Ref. No.	Part No.	Description
PACKING MATERIAL		
P1	SPP753	PROTECTION COVER
P2 (EK, E, EH, EB) (EG, EI, XL) (XA, XB)	SPG6354	PACKING CASE
P2 (EF)	SPG6355	PACKING CASE
P3	SPS5182	PAD, FRONT
P4	SPS5183	PAD, REAR
P5	SPS5184	PAD
P6	XZB10X30A02	PROTECTION COVER
ACCESSORIES		
A2 (E, EH, EF, EB) (EG, EI)	SFDAC05E03	POWER CORD
A2 (XA)	SJA168	POWER CORD
A2 (XL)	SJA173	POWER CORD
A2 (XB)	SJA183	POWER CORD
A2 (EK)	SJA188	POWER CORD
A2 (XA, XB)	RJP120ZBS-H	AC PLUG ADAPTOR
OPERATING INSTRUCTIONS		
A1 (E, EH, EB)	SQF13296	INSTRUCTION BOOK
A1 (EK)	SQF13297	INSTRUCTION BOOK
A1 (EF, XA)	SQF13298	INSTRUCTION BOOK
A1 (EG)	SQF13299	INSTRUCTION BOOK
A1 (EI)	SQF13300	INSTRUCTION BOOK
A1 (XL, XB)	SQF13301	INSTRUCTION BOOK

■ RESI

Notes : * Im
Co
ma
* Br
Pa

Numbering S

Example:

ERD	2
Type	Watt (1/4
ERX	2
Type	Watt (2

Numbering Sy

Example:

ECKD	1
Type	Volt (50
ECEA	5
Type	Volt (50

● Capacity ar otherwise,
● Resistance otherwise,

Ref. No.
RESISTORS(V
R101
R102
R105
R106
R107
R108
R109
R110
R111
R112
R113
R114
R115
R116
R117
R118
R119
R120
R121
R122
R201
R202
R203
R204
R205
R206
R207
R208
R213
R214
R215
R216
R217
R218
R221
R222
R223
R224
R227
R228

Ref. No.	Part No.	Description
D648	MA165	DIODE
D649	MA165	DIODE
D701 ⚠	SVDS3V40	RECTIFIER
D702 ⚠	SVDS3V40	RECTIFIER
D703 ⚠	SVDS3V40	RECTIFIER
D704 ⚠	SVDS3V40	RECTIFIER
D705	MA4140-M	DIODE
D706	MA4140-M	DIODE
D707	MA29WA	DIODE
D709	MA167	DIODE
D710	MA167	DIODE
D711	MA165	DIODE
D714	MA4300M	DIODE
D800	MA165	DIODE
D801	MA165	DIODE
D802	MA165	DIODE
D803	MA165	DIODE
D804	MA165	DIODE
D805	MA165	DIODE
D806	MA29WA	DIODE
D807	MA4051-M	DIODE
D808	MA4051-M	DIODE
D809	MA165	DIODE
D810	LN038417P1	DIODE
D811	LN038417P1	DIODE
D812	LN038417P1	DIODE
D813	MA29WA	DIODE
D814	MA700A	DIODE
VARIABLE RESISTORS		
VR401	EWC2XAF20C15	V.R
VR402	EWC2XAF20C15	V.R
VR403	EWHFDAF20G15	V.R
VR601	EVQWX2F2045B	V.R.
COILS AND TRANSFORMERS		
L301	ELEXT100KA	COIL
L501	SLQY07G-40	CHOKE COIL
L502	SLQY07G-40	CHOKE COIL
L505 (EG, EI)	SLQY07G-40	CHOKE COIL
L506 (EG, EI)	SLQY07G-40	CHOKE COIL
L507 (EG, EI)	SLQY07G-40	CHOKE COIL
L508 (EG, EI)	SLQY07G-40	CHOKE COIL
L601	ELEXH101KA	COIL
L603	ELEXH330KA	COIL
L604	ELEXH330KA	COIL
L605	ELEPK1R2MA	COIL
L609	ELEXH330KA	COIL
L803	ELEXT470KA	COIL
L804	ELEXT470KA	COIL
L805	ELEXT470KA	COIL
L806	ELEXH101KA	COIL
L807	ELEXH101KA	COIL
T700 ⚠ (EK, XL)	SLT5N484-W	POWER TRANSFORMER
T700 ⚠ (E, EH, EF, EB) (EG, EI)	SLT5N485-W	POWER TRANSFORMER
T700 ⚠ (XA, XB)	SLT5N486-W	POWER TRANSFORMER
COMPONENT COMBINATIONS		
Z601	EXFP5331MW	COMBINATION PART
Z602	EXFP7331MW	COMPONENT COMBINATION
Z603	EXBF5E103J	COMBINATION PART
Z604	EXBF8E103J	10KΩ X 8
Z801	EXCEMT103DC	CNMBINATION COM
Z802	EXCEMT103DC	CNMBINATION COM
Z803	EXCEMT103DC	CNMBINATION COM
DISPLAYS		
FL1	SADFV217	DISPLAY TUBE
FUSES		
F1 ⚠	XBA2C16TB0	FUSE 250V, A1.6A
F1 ⚠ (XA, XB)	XBA2C31TB0	FUSE 250V, T3.15A
F2 ⚠ (XA, XB)	XBA2C16TB0	FUSE 250V, A1.6A
F2 ⚠ (E, EH, EF, EB) (EG, EI)	XBA2C20TB0	FUSE 250V, T2A
SWITCHES		
S201	SSS153	SW
S501	SSH1073	SW, SPEAKER
S601	EVQQB005R	SW
S602	EVQQB005R	SW
S603	EVQQB005R	SW
S604	EVQQB005R	SW
S605	EVQQB005R	SW
S606	EVQQB005R	SW
S607	EVQQB005R	SW
S608	EVQQB005R	SW
S609	EVQQLY07K	SPECIAL SW
S610	EVQQLY07K	SPECIAL SW
S700 ⚠	SSH1071	SW, POWER
S701 ⚠ (XA, XB)	ESE37263	SW, VOLTAGE SEL.
RELAYS		
RL501	SSY134	RELAY
OTHERS		
X601	EF0FC4004A4	CERAMIC FILTER
X801	SVQAT1923	CRYSTAL OSCILLATOR

●PACKING PARTS LIST

Ref. No.	Part No.	Description
PACKING MATERIAL		
P1	SPP753	PROTECTION COVER
P2 (EK, E, EH, EB) (EG, EI, XL) (XA, XB)	SPG6354	PACKING CASE
P2 (EF)	SPG6355	PACKING CASE
P3	SPS5182	PAD, FRONT
P4	SPS5183	PAD, REAR
P5	SPS5184	PAD
P6	XZB10X30A02	PROTECTION COVER
ACCESSORIES		
A2 (E, EH, EF, EB) (EG, EI)	SFDAC05E03	POWER CORD
A2 (XA)	SJA168	POWER CORD
A2 (XL)	SJA173	POWER CORD
A2 (XB)	SJA183	POWER CORD
A2 (EK)	SJA188	POWER CORD
A2 (XA, XB)	RJP120ZBS-H	AC PLUG ADAPTOR
OPERATING INSTRUCTIONS		
A1 (E, EH, EB)	SQF13296	INSTRUCTION BOOK
A1 (EK)	SQF13297	INSTRUCTION BOOK
A1 (EF, XA)	SQF13298	INSTRUCTION BOOK
A1 (EG)	SQF13299	INSTRUCTION BOOK
A1 (EI)	SQF13300	INSTRUCTION BOOK
A1 (XL, XB)	SQF13301	INSTRUCTION BOOK

■ RESISTORS AND CAPACITORS

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Peculiarity
ECEA	50	M	330	
Type	Voltage (50V)	Pecliarity	Value (33μF)	

● Capacity are in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
● Resistance are in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Cip Resistor			
ERJ	: Cip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80 % −20
ECQM	: Poyester	50 : 50V	05 : 50V	
ECQP	: Polypropylene	2H : 500V	2A : 100V	J : ±5%
ECG	: Ceramic	1 : 100V	1J : 63V	G : ±2%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		F : ±1%
QCU	: Ceramic (Chip Type)	KC : 125V AC		C : ±0.25pF
ECUX	: Ceramic (Chip Type)	(UL)		D : ±0.5pF
ECF	: Semiconductor			
EECW	: Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
RESISTORS(VALUE,WATTAGE)			R229	ERDS2TJ392	3.9K 1/4	R325	ERDS2TJ392	3.9K 1/4
R101	ERDS2TJ471	470 1/4	R230	ERDS2TJ392	3.9K 1/4	R326	ERDS2TJ392	3.9K 1/4
R102	ERDS2TJ471	470 1/4	R231	ERDS2TJ332	3.3K 1/4	R327	ERDS2TJ104	100K 1/4
R105	ERDS2TJ224	220K 1/4	R232	ERDS2TJ332	3.3K 1/4	R328	ERDS2TJ104	100K 1/4
R106	ERDS2TJ224	220K 1/4	R233	ERDS2TJ223	22K 1/4	R329	ERDS2TJ103	10K 1/4
R107	ERDS2TJ331	330 1/4	R234	ERDS2TJ122	1.2K 1/4	R330	ERDS2TJ473	47K 1/4
R108	ERDS2TJ331	330 1/4	R235	ERDS2TJ223	22K 1/4	R331	ERDS2TJ393	39K 1/4
R109	ERDS2TJ563	56K 1/4	R236	ERDS2TJ223	22K 1/4	R332	ERDS2TJ104	100K 1/4
R110	ERDS2TJ563	56K 1/4	R237	ERDS2TJ223	22K 1/4	R351	ERDS2TJ103	10K 1/4
R111	ERDS2TJ271	270 1/4	R238	ERDS2TJ152	1.5K 1/4	R352	ERDS2TJ103	10K 1/4
R112	ERDS2TJ271	270 1/4	R239	ERDS2TJ152	1.5K 1/4	R353	ERDS2TJ103	10K 1/4
R113	ERDS2TJ680	68 1/4	R251	ERDS2TJ103	10K 1/4	R354	ERDS2TJ103	10K 1/4
R114	ERDS2TJ680	68 1/4	R252	ERDS2TJ102	1K 1/4	R355	ERDS2TJ122	1.2K 1/4
R115	ERDS2TJ184	180K 1/4	R253	ERDS2TJ103	10K 1/4	R356	ERDS2TJ122	1.2K 1/4
R116	ERDS2TJ184	180K 1/4	R254	ERDS2TJ103	10K 1/4	R357	ERDS2TJ392	3.9K 1/4
R117	ERDS2TJ123	12K 1/4	R257	ERDS2TJ224	220K 1/4	R358	ERDS2TJ392	3.9K 1/4
R118	ERDS2TJ123	12K 1/4	R258	ERDS2TJ224	220K 1/4	R359	ERDS2TJ103	10K 1/4
R119	ERDS2TJ104	100K 1/4	R259	ERDS2TJ104	100K 1/4	R360	ERDS2TJ103	10K 1/4
R120	ERDS2TJ104	100K 1/4	R260	ERDS2TJ104	100K 1/4	R361	ERDS2TJ273	27K 1/4
R121	ERDS2TJ102	1K 1/4	R263	ERDS2TJ331	330 1/4	R362	ERDS2TJ273	27K 1/4
R122	ERDS2TJ102	1K 1/4	R264	ERDS2TJ331	330 1/4	R363	ERDS2TJ103	10K 1/4
R201	ERDS2TJ102	1K 1/4	R301	ERDS2TJ223	22K 1/4	R364	ERDS2TJ103	10K 1/4
R202	ERDS2TJ102	1K 1/4	R302	ERDS2TJ223	22K 1/4	R365	ERDS2TJ122	1.2K 1/4
R203	ERDS2TJ822	8.2K 1/4	R303	ERDS2TJ223	22K 1/4	R401	ERDS2TJ223	22K 1/4
R204	ERDS2TJ822	8.2K 1/4	R304	ERDS2TJ223	22K 1/4	R402	ERDS2TJ223	22K 1/4
R205	ERDS2TJ102	1K 1/4	R307	ERDS2TJ332	3.3K 1/4	R405	ERDS2TJ563	56K 1/4
R206	ERDS2TJ102	1K 1/4	R308	ERDS2TJ332	3.3K 1/4	R406	ERDS2TJ563	56K 1/4
R207	ERDS2TJ102	1K 1/4	R309	ERDS2TJ223	22K 1/4	R409	ERDS2TJ333	33K 1/4
R208	ERDS2TJ102	1K 1/4	R310	ERDS2TJ393	39K 1/4	R410	ERDS2TJ333	33K 1/4
R213	ERDS2TJ471	470 1/4	R311	ERDS2TJ223	22K 1/4	R415	ERDS2TJ821	820 1/4
R214	ERDS2TJ471	470 1/4	R312	ERDS2TJ393	39K 1/4	R416	ERDS2TJ821	820 1/4
R215	ERDS2TJ182	1.8K 1/4	R313	ERDS2TJ223	22K 1/4	R417	ERDS2TJ391	390 1/4
R216	ERDS2TJ182	1.8K 1/4	R314	ERDS2TJ223	22K 1/4	R418	ERDS2TJ391	390 1/4
R217	ERDS2TJ472	4.7K 1/4	R315	ERDS2TJ223	22K 1/4	R419	ERDS2TJ273	27K 1/4
R218	ERDS2TJ472	4.7K 1/4	R316	ERDS2TJ822	8.2K 1/4	R420	ERDS2TJ273	27K 1/4
R221	ERDS2TJ102	1K 1/4	R317	ERDS2TJ562	5.6K 1/4	R423	ERDS2TJ153	15K 1/4
R222	ERDS2TJ102	1K 1/4	R318	ERDS2TJ562	5.6K 1/4	R424	ERDS2TJ153	15K 1/4
R223	ERDS2TJ821	820 1/4	R319	ERDS2TJ562	5.6K 1/4	R425	ERDS2TJ152	1.5K 1/4
R224	ERDS2TJ821	820 1/4	R320	ERDS2TJ224	220K 1/4	R426	ERDS2TJ152	1.5K 1/4
R227	ERDS2TJ102	1K 1/4	R321	ERDS2TJ332	3.3K 1/4	R427	ERDS2TJ152	1.5K 1/4
R228	ERDS2TJ102	1K 1/4	R322	ERDS2TJ332	3.3K 1/4	R428	ERDS2TJ152	1.5K 1/4
			R324	ERDS2TJ332	3.3K 1/4	R429	ERDS2TJ182	1.8K 1/4

RESISTORS AND CAPACITORS

es : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

nbering System of Resistor

mple:

D	25	F	J	102
e	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)
X	2	AN	J	471
e	Wattage (2W)	Shape	Tolerance	Value (470Ω)

nbering System of Capacitor

mple:

CD	1H	102	Z	F
e	Voltage (50V)	Value (0.001μF)	Tolerance	Peculiarity
A	50	M	330	
e	Voltage (50V)	Pecliarity	Value (33μF)	

apacity are in microfarads (μF) unless specified
herwise, P = Pico-farads (pF) F = Farads (F).
esistance are in ohms (Ω), unless specified
herwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Cip Resistor			
ERJ	: Cip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80 % −20
ECQM	: Poyester	50 : 50V	05 : 50V	
ECQP	: Polypropylene	2H : 500V	2A : 100V	J : ±5%
ECG	: Ceramic	1 : 100V	1J : 63V	G : ±2%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		F : ±1%
QCU	: Ceramic (Chip Type)	KC : 125V AC (UL)		C : ±0.25pF
ECUX	: Ceramic (Chip Type)			D : ±0.5pF
ECF	: Semiconductor			
EECW	: Liquid electrolyte double layer capacitor			

ef. No.	Part No.	Value.
SISTORS(VALUE,WATTAGE)		
1	ERDS2TJ471	470 1/4
2	ERDS2TJ471	470 1/4
5	ERDS2TJ224	220K 1/4
6	ERDS2TJ224	220K 1/4
7	ERDS2TJ331	330 1/4
8	ERDS2TJ331	330 1/4
9	ERDS2TJ563	56K 1/4
0	ERDS2TJ563	56K 1/4
1	ERDS2TJ271	270 1/4
2	ERDS2TJ271	270 1/4
3	ERDS2TJ680	68 1/4
4	ERDS2TJ680	68 1/4
5	ERDS2TJ184	180K 1/4
6	ERDS2TJ184	180K 1/4
7	ERDS2TJ123	12K 1/4
8	ERDS2TJ123	12K 1/4
9	ERDS2TJ104	100K 1/4
0	ERDS2TJ104	100K 1/4
1	ERDS2TJ102	1K 1/4
2	ERDS2TJ102	1K 1/4
1	ERDS2TJ102	1K 1/4
2	ERDS2TJ102	1K 1/4
3	ERDS2TJ822	8.2K 1/4
4	ERDS2TJ822	8.2K 1/4
5	ERDS2TJ102	1K 1/4
6	ERDS2TJ102	1K 1/4
7	ERDS2TJ102	1K 1/4
8	ERDS2TJ102	1K 1/4
3	ERDS2TJ471	470 1/4
4	ERDS2TJ471	470 1/4
5	ERDS2TJ182	1.8K 1/4
6	ERDS2TJ182	1.8K 1/4
7	ERDS2TJ472	4.7K 1/4
8	ERDS2TJ472	4.7K 1/4
1	ERDS2TJ102	1K 1/4
2	ERDS2TJ102	1K 1/4
3	ERDS2TJ821	820 1/4
4	ERDS2TJ821	820 1/4
7	ERDS2TJ102	1K 1/4
8	ERDS2TJ102	1K 1/4

Ref. No.	Part No.	Value.
R229	ERDS2TJ392	3.9K 1/4
R230	ERDS2TJ392	3.9K 1/4
R231	ERDS2TJ332	3.3K 1/4
R232	ERDS2TJ332	3.3K 1/4
R233	ERDS2TJ223	22K 1/4
R234	ERDS2TJ122	1.2K 1/4
R235	ERDS2TJ223	22K 1/4
R236	ERDS2TJ223	22K 1/4
R237	ERDS2TJ223	22K 1/4
R238	ERDS2TJ152	1.5K 1/4
R239	ERDS2TJ152	1.5K 1/4
R251	ERDS2TJ103	10K 1/4
R252	ERDS2TJ102	1K 1/4
R253	ERDS2TJ103	10K 1/4
R254	ERDS2TJ103	10K 1/4
R257	ERDS2TJ224	220K 1/4
R258	ERDS2TJ224	220K 1/4
R259	ERDS2TJ104	100K 1/4
R260	ERDS2TJ104	100K 1/4
R263	ERDS2TJ331	330 1/4
R264	ERDS2TJ331	330 1/4
R301	ERDS2TJ223	22K 1/4
R302	ERDS2TJ223	22K 1/4
R303	ERDS2TJ223	22K 1/4
R304	ERDS2TJ223	22K 1/4
R307	ERDS2TJ332	3.3K 1/4
R308	ERDS2TJ332	3.3K 1/4
R309	ERDS2TJ223	22K 1/4
R310	ERDS2TJ393	39K 1/4
R311	ERDS2TJ223	22K 1/4
R312	ERDS2TJ393	39K 1/4
R313	ERDS2TJ223	22K 1/4
R314	ERDS2TJ223	22K 1/4
R315	ERDS2TJ223	22K 1/4
R316	ERDS2TJ822	8.2K 1/4
R317	ERDS2TJ562	5.6K 1/4
R318	ERDS2TJ562	5.6K 1/4
R319	ERDS2TJ562	5.6K 1/4
R320	ERDS2TJ224	220K 1/4
R321	ERDS2TJ332	3.3K 1/4
R322	ERDS2TJ332	3.3K 1/4
R324	ERDS2TJ332	3.3K 1/4

Ref. No.	Part No.	Value.
R325	ERDS2TJ392	3.9K 1/4
R326	ERDS2TJ392	3.9K 1/4
R327	ERDS2TJ104	100K 1/4
R328	ERDS2TJ104	100K 1/4
R329	ERDS2TJ103	10K 1/4
R330	ERDS2TJ473	47K 1/4
R331	ERDS2TJ393	39K 1/4
R332	ERDS2TJ104	100K 1/4
R351	ERDS2TJ103	10K 1/4
R352	ERDS2TJ103	10K 1/4
R353	ERDS2TJ103	10K 1/4
R354	ERDS2TJ103	10K 1/4
R355	ERDS2TJ122	1.2K 1/4
R356	ERDS2TJ122	1.2K 1/4
R357	ERDS2TJ392	3.9K 1/4
R358	ERDS2TJ392	3.9K 1/4
R359	ERDS2TJ103	10K 1/4
R360	ERDS2TJ103	10K 1/4
R361	ERDS2TJ273	27K 1/4
R362	ERDS2TJ273	27K 1/4
R363	ERDS2TJ103	10K 1/4
R364	ERDS2TJ103	10K 1/4
R365	ERDS2TJ122	1.2K 1/4
R401	ERDS2TJ223	22K 1/4
R402	ERDS2TJ223	22K 1/4
R405	ERDS2TJ563	56K 1/4
R406	ERDS2TJ563	56K 1/4
R409	ERDS2TJ333	33K 1/4
R410	ERDS2TJ333	33K 1/4
R415	ERDS2TJ821	820 1/4
R416	ERDS2TJ821	820 1/4
R417	ERDS2TJ391	390 1/4
R418	ERDS2TJ391	390 1/4
R419	ERDS2TJ273	27K 1/4
R420	ERDS2TJ273	27K 1/4
R423	ERDS2TJ153	15K 1/4
R424	ERDS2TJ153	15K 1/4
R425	ERDS2TJ152	1.5K 1/4
R426	ERDS2TJ152	1.5K 1/4
R427	ERDS2TJ152	1.5K 1/4
R428	ERDS2TJ152	1.5K 1/4
R429	ERDS2TJ182	1.8K 1/4

Ref. No.	Part No.	Value.
R430	ERDS2TJ182	1.8K 1/4
R431	ERDS2TJ102	1K 1/4
R432	ERDS2TJ102	1K 1/4
R433	ERDS2TJ223	22K 1/4
R434	ERDS2TJ105	1M 1/4
R435	ERDS2TJ334	330K 1/4
R436	ERDS2TJ103	10K 1/4
R437	ERDS2TJ473	47K 1/4
R438	ERDS2TJ105	1M 1/4
R439	ERDS2TJ103	10K 1/4
R442	ERDS2TJ272	2.7K 1/4
R443	ERDS2TJ102	1K 1/4
R444	ERDS2TJ102	1K 1/4
R451	ERDS2TJ224	220K 1/4
R452	ERDS2TJ224	220K 1/4
R453	ERDS2TJ474	470K 1/4
R454	ERDS2TJ474	470K 1/4
R455	ERDS2TJ102	1K 1/4
R456	ERDS2TJ102	1K 1/4
R457	ERDS2TJ822	8.2K 1/4
R458	ERDS2TJ822	8.2K 1/4
R461	ERDS2TJ223	22K 1/4
R462	ERDS2TJ223	22K 1/4
R463	ERDS2TJ392	3.9K 1/4
R464	ERDS2TJ392	3.9K 1/4
R465	ERDS2TJ333	33K 1/4
R466	ERDS2TJ333	33K 1/4
R467	ERDS2TJ182	1.8K 1/4
R468	ERDS2TJ182	1.8K 1/4
R469	ERDS2TJ821	820 1/4
R470	ERDS2TJ821	820 1/4
R471	ERDS2TJ152	1.5K 1/4
R472	ERDS2TJ152	1.5K 1/4
R473	ERDS2TJ152	1.5K 1/4
R474	ERDS2TJ152	1.5K 1/4
R475	ERDS2TJ102	1K 1/4
R476	ERDS2TJ102	1K 1/4
R477	ERDS2TJ223	22K 1/4
R478	ERDS2TJ272	2.7K 1/4
R501	ERDS2TJ222	2.2K 1/4
R502	ERDS2TJ222	2.2K 1/4
R503	ERDS2TJ563	56K 1/4
R504	ERDS2TJ563	56K 1/4
R505	ERDS2TJ182	1.8K 1/4
R506	ERDS2TJ182	1.8K 1/4
R507	ERDS2TJ563	56K 1/4
R508	ERDS2TJ563	56K 1/4
R509	ERDS1FJ100	10 1/2
R510	ERDS1FJ100	10 1/2
R511	ERDS1FJ100	10 1/2
R512	ERDS1FJ100	10 1/2
R513	ERDS2TJ222	2.2K 1/4
R514	ERDS2TJ222	2.2K 1/4
R515	ERDS2TJ473	47K 1/4
R517	ERG1ANJ331	330 1
R517	ERG2ANJ331	330 2
R518	ERG1ANJ331	330 1
R518	ERG2ANJ331	330 2
R519	ERDS2TJ223	22K 1/4
R520	ERG3ANJ102	1K 3
R520	ERG3ANJ102	1K 3
R523	ERDS2TJ223	22K 1/4
R524	ERDS2TJ223	22K 1/4
R525	ERDS2TJ103	10K 1/4
R526	ERDS1FJ331	330 1/2
R527	ERDS2TJ153	15K 1/4
R528	ERDS2TJ103	10K 1/4
R595	ERDS2TJ223	22K 1/4
R596	ERDS2TJ223	22K 1/4
R601	ERDS2TJ223	22K 1/4
R602	ERDS2TJ103	10K 1/4
R603	ERDS2TJ103	10K 1/4
R610	ERDS2TJ470	47 1/4
R611	ERDS2TJ470	47 1/4
R612	ERDS2TJ470	47 1/4
R613	ERDS2TJ470	47 1/4
R614	ERDS2TJ470	47 1/4

Ref. No.	Part No.	Value.
R615	ERDS2TJ470	47 1/4
R616	ERDS2TJ470	47 1/4
R617	ERDS2TJ470	47 1/4
R618	ERDS2TJ822	8.2K 1/4
R619	ERDS2TJ272	2.7K 1/4
R620	ERDS2TJ272	2.7K 1/4
R621	ERDS2TJ272	2.7K 1/4
R622	ERDS2TJ332	3.3K 1/4
R623	ERDS2TJ223	22K 1/4
R624	ERDS2TJ223	22K 1/4
R625	ERDS2TJ104	100K 1/4
R626	ERDS2TJ105	1M 1/4
R627	ERDS2TJ102	1K 1/4
R628	ERDS2TJ104	100K 1/4
R631	ERDS2TJ102	1K 1/4
R632	ERDS2TJ102	1K 1/4
R633	ERDS2TJ153	15K 1/4
R634	ERDS2TJ153	15K 1/4
R635	ERDS2TJ473	47K 1/4
R636	ERDS2TJ473	47K 1/4
R637	ERDS2TJ330	33 1/4
R638 ⚠	ERDS2TJ101	100 1/4
R639 ⚠	ERDS2TJ101	100 1/4
R640	ERDS2TJ105	1M 1/4
R641	ERDS2TJ220	22 1/4
R645	ERDS2TJ102	1K 1/4
R646	ERDS2TJ102	1K 1/4
R651	ERDS2TJ221	220 1/4
R652	ERDS2TJ221	220 1/4
R653	ERDS2TJ221	220 1/4
R654	ERDS2TJ151	150 1/4
R655	ERDS2TJ151	150 1/4
R656	ERDS2TJ221	220 1/4
R657	ERDS2TJ221	220 1/4
R658	ERDS2TJ331	330 1/4
R659	ERDS2TJ121	120 1/4
R660	ERDS2TJ121	120 1/4
R701	ERDS1FJ2R2	2.2 1/2
R701	ERDS1FJ2R2	2.2 1/2
R702	ERD25FJ3R3	3.3 1/4
R702	ERD25FJ3R3	3.3 1/4
R703	ERDS2TJ682	6.8K 1/4
R704	ERDS2TJ822	8.2K 1/4
R705	ERDS2TJ333	33K 1/4
R706	ERDS1FJ100	10 1/2
R707 ⚠	ERDS2TJ222	2.2K 1/4
R708	ERDS2TJ682	6.8K 1/4
R710	ERDS1FJ331	330 1/2
R711	ERDS2TJ272	2.7K 1/4
R712 ⚠	ERDS2TJ684	680K 1/4
R713	ERDS2TJ154	150K 1/4
R800	ERDS2TJ221	220 1/4
R801	ERDS2TJ102	1K 1/4
R802	ERDS2TJ103	10K 1/4
R803	ERDS2TJ101	100 1/4
R804	ERDS2TJ101	100 1/4
R805	ERDS2TJ821	820 1/4
R806	ERDS2TJ151	150 1/4
R807	ERDS2TJ102	1K 1/4
R808	ERDS2TJ105	1M 1/4
R809	ERDS2TJ562	5.6K 1/4
R810	ERDS2TJ471	470 1/4
R811	ERDS2TJ101	100 1/4
R812	ERDS2TJ101	100 1/4
R814	ERDS2TJ223	22K 1/4
R815	ERDS2TJ224	220K 1/4
R816	ERDS2TJ224	220K 1/4
R817	ERDS2TJ272	2.7K 1/4
R818	ERDS2TJ103	10K 1/4
R819	ERDS2TJ103	10K 1/4
R821	ERDS2TJ272	2.7K 1/4
R822	ERDS2TJ272	2.7K 1/4
R823	ERDS2TJ222	2.2K 1/4
R824	ERDS2TJ222	2.2K 1/4
R825	ERDS2TJ272	2.7K 1/4
R826	ERDS2TJ474	470K 1/4
R827	ERDS2TJ102	1K 1/4

Ref. No.	Part No.	Value.
R828	ERDS2TJ102	1K 1/4
R829	ERDS2TJ102	1K 1/4
R830	ERDS2TJ102	1K 1/4
R831	ERDS2TJ472	4.7K 1/4
R832	ERDS2TJ472	4.7K 1/4
R833	ERDS2TJ822	8.2K 1/4
R834	ERDS2TJ822	8.2K 1/4
R835	ERDS2TJ102	1K 1/4
R836	ERDS2TJ102	1K 1/4
R837	ERDS2TJ104	100K 1/4
R838	ERDS2TJ564	560K 1/4
R839	ERDS1FJ391	390 1/2
R840	ERDS1FJ271	270 1/2
R841	ERDS2TJ474	470K 1/4
R842	ERDS2TJ474	470K 1/4
CAPACITORS(VALUE,VOLTAGE)		
C101 (EG, EI)	RCBC1H180JLY	18P 50
C102 (EG, EI)	RCBC1H180JLY	18P 50
C103 (EG, EI)	RCBC1H151KBY	150P 50
C104 (EG, EI)	RCBC1H151KBY	150P 50
C105	ECEA1HPS3R3	3.3 50
C106	ECEA1HPS3R3	3.3 50
C107	RCBC1H101KBY	100P 50
C108	RCBC1H101KBY	100P 50
C109	ECBT1H102KB5	0.001 50
C110	ECBT1H102KB5	0.001 50
C111	ECEA0JPS330	33 6.3
C112	ECEA0JPS330	33 6.3
C115	ECFTD223KXL	0.022 25
C116	ECFTD223KXL	0.022 25
C117	ECFTD682KXL	0.0068 25
C118	ECFTD682KXL	0.0068 25
C119	ECEA1HPS3R3	3.3 50
C120	ECEA1HPS3R3	3.3 50
C121	ECFTD103KXL	0.01 25
C122	ECFTD103KXL	0.01 25
C123	ECKD1H473ZF	0.047 50
C124 (EG, EI)	ECFTD103KXL	0.01 25
C201	ECEA1HPS3R3	3.3 50
C202	ECEA1HPS3R3	3.3 50
C203	ECEA1HPS3R3	3.3 50
C204	ECEA1HPS3R3	3.3 50
C205	ECEA1HPS3R3	3.3 50
C206	ECEA1HPS3R3	3.3 50
C220	ECKD1H473ZF	0.047 50
C221	ECEA1CKS100	10 16
C222	ECEA1CK220	22 16
C223	ECEA1CK220	22 16
C224	ECKD1H223PF	0.022 50
C225	ECKD1H223PF	0.022 50
C226	ECKD1H473ZF	0.047 50
C227	ECQV1H104JZ	0.1 50
C251 (EG, EI)	RCBC1H101KBY	100P 50
C252 (EG, EI)	RCBC1H101KBY	100P 50
C253 (EG, EI)	RCBC1H101KBY	100P 50
C254 (EG, EI)	RCBC1H101KBY	100P 50
C255 (EG, EI)	RCBC1H101KBY	100P 50
C256 (EG, EI)	RCBC1H101KBY	100P 50
C257 (EG, EI)	RCBC1H101KBY	100P 50
C258 (EG, EI)	RCBC1H101KBY	100P 50
C261 (EG, EI)	RCBC1H101KBY	100P 50
C262	RCBC1H101KBY	100P 50

Ref. No.	Part No.	Value.
C263	RCBC1H101KBY	100P 50
(EG, EI)		
C264	RCBC1H101KBY	100P 50
(EG, EI)		
C265	RCBC1H101KBY	100P 50
(EG, EI)		
C266	RCBC1H101KBY	100P 50
(EG, EI)		
C267	RCBC1H101KBY	100P 50
(EG, EI)		
C268	RCBC1H101KBY	100P 50
(EG, EI)		
C269	RCBC1H101KBY	100P 50
(EG, EI)		
C270	RCBC1H101KBY	100P 50
(EG, EI)		
C271	RCBC1H101KBY	100P 50
(EG, EI)		
C272	RCBC1H101KBY	100P 50
(EG, EI)		
C307	RCBC1H680JLY	68P 50
C308	ECFTD823KXL	0.082 25
C309	ECEA1EK3R3B	3.3 25
C310	RCBS1H221KBY	220P 50
C311	ECEA1EK3R3B	3.3 25
C313	RCBS1H820KBY	82P 50
C314	RCBS1H820KBY	82P 50
C315	ECEA1HPS3R3	3.3 50
C316	ECEA1HPS3R3	3.3 50
C317	ECFTD104KXL	0.1 25
C318	ECKD1H223PF	0.022 50
C351	ECBT1E103ZF	0.01 25
C352	ECBT1E103ZF	0.01 25
C353	RCBS1H330JLY	33P 50
C354	RCBS1H330JLY	33P 50
C355	ECEA1HPS3R3	3.3 50
C356	ECEA1HPS3R3	3.3 50
C357	ECEA1HPS3R3	3.3 50
C358	ECEA1HPS3R3	3.3 50
C359	RCBS1H330JLY	33P 50
C360	RCBS1H330JLY	33P 50
C361	ECEA1HPS3R3	3.3 50
C362	ECEA1HPS3R3	3.3 50
C363	ECEA1HPS3R3	3.3 50
C364	ECEA1HPS3R3	3.3 50
C365	ECEA1CK220	22 16
C367	ECEA1CK220	22 16
C369	ECEA1CK220	22 16
C370	ECEA1CK220	22 16
C373	RCBS1H820KBY	82P 50
(EG, EI)		
C374	RCBS1H820KBY	82P 50
(EG, EI)		
C401	ECEA1EK3R3B	3.3 25
C402	ECEA1EK3R3B	3.3 25
C409	RCBC1H101KBY	100P 50
C410	RCBC1H101KBY	100P 50
C411	RCBS1H100JLY	10P 50
C412	RCBS1H100JLY	10P 50
C413	ECEA1HK2R2B	2.2 50
C414	ECEA1HK2R2B	2.2 50
C419	ECFTD473KXL	0.047 25
C420	ECFTD473KXL	0.047 25
C421	ECEA1HK2R2B	2.2 50
C422	ECEA1HK2R2B	2.2 50
C423	ECEA1HPS3R3	3.3 50
C424	ECEA1HPS3R3	3.3 50
C425	ECEA1HPS3R3	3.3 50
C426	ECEA1HPS3R3	3.3 50
C427	ECEA1HPS3R3	3.3 50
C428	ECEA1HPS3R3	3.3 50
C431	ECFTD104KXL	0.1 25
C432	ECEA1HK010	1 50
C451	RCBC1H101KBY	100P 50
C452	RCBC1H101KBY	100P 50

Ref. No.	Part No.	Value.
C453	RCBC1H680JLY	68P 50
C454	RCBC1H680JLY	68P 50
C455	ECBT1H821KB5	820P 50
C456	ECBT1H821KB5	820P 50
C457	ECFTD123KXL	0.012 25
C458	ECFTD123KXL	0.012 25
C459	ECFTD683KXL	0.068 25
C460	ECFTD683KXL	0.068 25
C461	ECEA1HPS010	1 50
C462	ECEA1HPS010	1 50
C463	ECFTD472KXL	0.0047 25
C464	ECFTD472KXL	0.0047 25
C465	ECFTD223KXL	0.022 25
C466	ECFTD223KXL	0.022 25
C467	ECEA1HPS3R3	3.3 50
C468	ECEA1HPS3R3	3.3 50
C469	ECFTD103KXL	0.01 25
C470	ECFTD103KXL	0.01 25
C471	ECEA1CK470	47 16
C501	ECEA1HPS3R3	3.3 50
C502	ECEA1HPS3R3	3.3 50
C503	ECBT1H821KB5	820P 50
C504	ECBT1H821KB5	820P 50
C505	ECEA1CPS220	22 16
C506	ECEA1CPS220	22 16
C507	RCBS1H6R8KLY	6.8P 50
C508	RCBS1H6R8KLY	6.8P 50
C509	RCBC1H151KBY	150P 50
C509	RCBS1H271KBY	270P 50
(EG, EI)		
C510	RCBC1H151KBY	150P 50
C511	ECFTD473KXL	0.047 25
C512	ECFTD473KXL	0.047 25
C513	ECEA0JS331	330 6.3
C514	ECEA1HKR22	0.22 50
C515	ECEA0JK330	33 6.3
C516	ECKD1H103PF	0.01 50
(EG, EI)		
C517	ECEA1HN2R2S	2.2 50
(EG, EI)		
C518	ECEA1CKS100	10 16
C519	ECEA1CK470	47 16
C520	ECEA1CK101	100 16
C521	ECFTD473KXL	0.047 25
C522	ECFTD473KXL	0.047 25
C523	ECKD1H102KB	0.001 50
C524	ECKD1H102KB	0.001 50
C561	ECKD1H102KB	0.001 50
(EG, EI)		
C562	ECKD1H102KB	0.001 50
(EG, EI)		
C563	ECKD1H223PF	0.022 50
(EG, EI)		
C564	ECKD1H223PF	0.022 50
(EG, EI)		
C565	ECKD1H102KB	0.001 50
(EG, EI)		
C566	ECKD1H102KB	0.001 50
(EG, EI)		
C567	ECKD1H223PF	0.022 50
(EG, EI)		
C568	ECKD1H223PF	0.022 50
(EG, EI)		
C597	RCBS1H221KBY	220P 50
(EG, EI)		
C598	RCBS1H221KBY	220P 50
(EG, EI)		
C600	ECEA1CKS100	10 16
C601	ECEA1CK101	100 16
C602	ECKD1H223PF	0.022 50
C603	ECEA1HK010	1 50
C604	ECFTD333KXL	0.033 25
C605	ECFTD683KXL	0.068 25
C606	ECEA1EK4R7	4.7 25
C607	ECEA1HK010	1 50

Ref. No.	Part No.	Value.
C608	ECBT1H102KB5	0.001 50
C609	ECBT1H102KB5	0.001 50
C610	ECEA1CKS100	10 16
C611	RCBC1H101KBY	100P 50
C612	RCBC1H101KBY	100P 50
C613	RCBS1H221KBY	220P 50
C614	RCBS1H221KBY	220P 50
C615	ECEA1VKA330	33 35
C616	ECEA1HK2R2B	2.2 50
C617	ECEA1HK2R2B	2.2 50
C618	ECKD1H223PF	0.022 50
C619	ECFTD103KXL	0.01 25
C620	ECKD1H103PF	0.01 50
C621	ECKD1H103PF	0.01 50
C622	ECKD1H103PF	0.01 50
C623	ECKD1H103PF	0.01 50
C624	ECKD1H103PF	0.01 50
C625	ECKD1H103PF	0.01 50
C626	ECKD1H103PF	0.01 50
C627	ECKD1H103PF	0.01 50
C628	ECKD1H103PF	0.01 50
C629	ECKD1H102KB	0.001 50
C630	ECKD1H103PF	0.01 50
C631	ECKD1H103PF	0.01 50
C632	ECKD1H103PF	0.01 50
C697	ECQM1H474JZ	0.47 50
C698	RCBS1H221KBY	220P 50
C699	RCBS1H221KBY	220P 50
C700 ⚠	ECKDKC103PF2	0.01 125
C701	ECETS1JU682U	6800
C702	ECETS1JU682U	6800
C703	ECFTD103KXL	0.01 25
C704	ECFTD103KXL	0.01 25
C705	ECEA1CU470	47 16
C706	ECEA1CU470	47 16
C707	ECEA1CK220	22 16
C708	ECEA1CK220	22 16
C709 ⚠	ECQE2104KS	0.1 250
C710	ECEA1HK4R7	4.7 50
C711	ECEA1VK100B	10 35
C712	ECEA1VU330	33 35
C713	ECEA1CKS100	10 16
C714	ECEA1HK010	1 50
C715	ECFTD473KXL	0.047 25
(EG, EI)		
C716 ⚠	ECKD1H103PF	0.01 50
(EG, EI)		
C803	ECEA0JU101	100 6.3
C804	ECEA0JU101	100 6.3
C805	ECEA0JU101	100 6.3
C806	ECEA0JU101	100 6.3
C807	ECQV1H104JZ	0.1 50
C808	ECEA0JU101	100 6.3
C809	ECQV1H104JZ	0.1 50
C810	ECQM1H103JZ	0.01 50
C811	RCBS1H100JLY	10P 50
C812	RCBS1H100JLY	10P 50
C813	ECEA1HK010	1 50
C814	ECEA0JU101	100 6.3
C815	RCBC1H151KBY	150P 50
C816	RCBS1H6R8KLY	6.8P 50
C821	ECEA0JU101	100 6.3
C822	ECEA0JU101	100 6.3
C823	ECQV1H104JZ	0.1 50
C824	ECEA1EK4R7	4.7 25
C825	ECFTD104KXL	0.1 25
C827	RCBS1H271KBY	270P 50
C828	RCBS1H271KBY	270P 50
C829	ECEA1EN4R7S	4.7 25
C830	ECEA1EN4R7S	4.7 25
C831	ECBT1H102KB5	0.001 50
C832	ECBT1H102KB5	0.001 50
C833	ECQV1H104JZ	0.1 50
C834	ECQV1H104JZ	0.1 50
C835	ECEA1CKS100	10 16
C836	ECEA1EK3R3	3.3 25

Printed in Japan
F880406000 YY/HK/IM